OM-237 323E

2009–07

Processes

MIG (GMAW) Welding

Flux Cored (FCAW) Welding

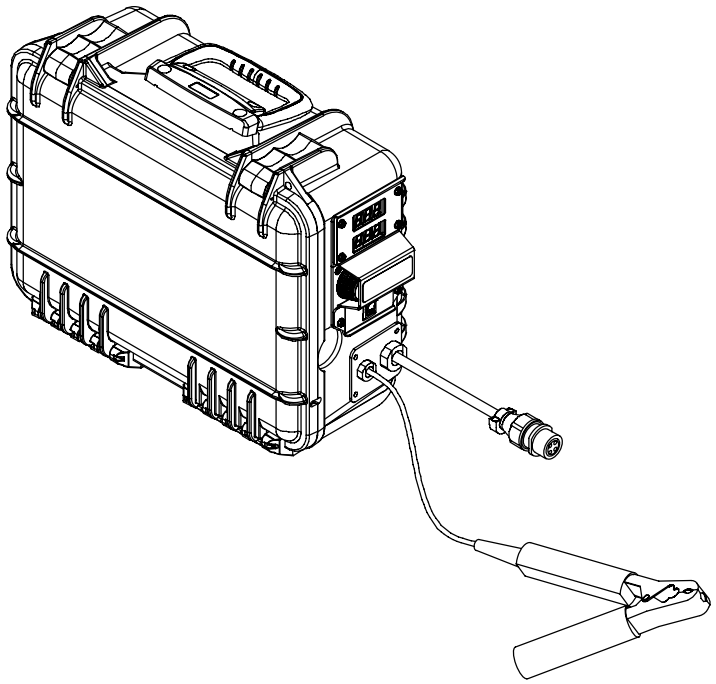
Description

CV DC

Wire Feeder

SuitCase™ X-TREME™ 8VS WCC

(With Weld Cable Control)



OWNER'S MANUAL

File: MIG (GMAW)

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www.MillerWelds.com

From Miller to You

Thank you and *congratulations* on choosing Miller. Now you can get the job done and get it done right. We know you don't have time to do it any other way.

That's why when Niels Miller first started building arc welders in 1929, he made sure his products offered long-lasting value and superior quality. Like you, his customers couldn't afford anything less. Miller products had to be more than the best they could be. They had to be the best you could buy.

Today, the people that build and sell Miller products continue the tradition. They're just as committed to providing equipment and service that meets the high standards of quality and value established in 1929.

This Owner's Manual is designed to help you get the most out of your Miller products. Please take time to read the Safety precautions. They will help you protect yourself against potential hazards on the worksite.

ISO 9001:2000 REGISTERED QUALITY SYSTEM

Miller is the first welding equipment manufacturer in the U.S.A. to be registered to the ISO 9001:2000 Quality System Standard.

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Miller Electric manufactures a full line of welders and welding related equipment. For information on other quality Miller products, contact your local Miller distributor to receive the latest full line catalog or individual specification sheets. **To locate your nearest distributor or service agency call 1-800-4-A-Miller, or visit us at www.MillerWelds.com on the web.**

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Working as hard as you do – every power source from Miller is backed by the most hassle-free warranty in the business.

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SECTION 1 – SAFETY PRECAUTIONS - READ BEFORE USING

Protect yourself and others from injury — read and follow these precautions.

1-1. Symbol Usage

DANGER! – Indicates a hazardous situation which, if not avoided, will result in death or serious injury. The possible hazards are shown in the adjoining symbols or explained in the text.

Indicates a hazardous situation which, if not avoided, could result in death or serious injury. The possible hazards are shown in the adjoining symbols or explained in the text.

NOTICE *– Indicates statements not related to personal injury.*

☞ *Indicates special instructions.*

This group of symbols means Warning! Watch Out! ELECTRIC SHOCK, MOVING PARTS, and HOT PARTS hazards. Consult symbols and related instructions below for necessary actions to avoid the hazards.

1-2. Arc Welding Hazards

The symbols shown below are used throughout this manual to call attention to and identify possible hazards. When you see the symbol, watch out, and follow the related instructions to avoid the hazard. The safety information given below is only a summary of the more complete safety information found in the Safety Standards listed in Section 1-5. Read and follow all Safety Standards.

Only qualified persons should install, operate, maintain, and repair this unit.

During operation, keep everybody, especially children, away.

ELECTRIC SHOCK can kill.

Touching live electrical parts can cause fatal shocks or severe burns. The electrode and work circuit is electrically live whenever the output is on. The input power circuit and machine internal circuits are also live when power is on. In semiautomatic or automatic wire welding, the wire, wire reel, drive roll housing, and all metal parts touching the welding wire are electrically live. Incorrectly installed or improperly grounded equipment is a hazard.

- Do not touch live electrical parts.
- Wear dry, hole-free insulating gloves and body protection.
- Insulate yourself from work and ground using dry insulating mats or covers big enough to prevent any physical contact with the work or ground.
- Do not use AC output in damp areas, if movement is confined, or if there is a danger of falling.
- Use AC output ONLY if required for the welding process.
- If AC output is required, use remote output control if present on unit.
- Additional safety precautions are required when any of the following electrically hazardous conditions are present: in damp locations or while wearing wet clothing; on metal structures such as floors, gratings, or scaffolds; when in cramped positions such as sitting, kneeling, or lying; or when there is a high risk of unavoidable or accidental contact with the workpiece or ground. For these conditions, use the following equipment in order presented: 1) a semiautomatic DC constant voltage (wire) welder, 2) a DC manual (stick) welder, or 3) an AC welder with reduced open-circuit voltage. In most situations, use of a DC, constant voltage wire welder is recommended. And, do not work alone!
- Disconnect input power or stop engine before installing or servicing this equipment. Lockout/tagout input power according to OSHA 29 CFR 1910.147 (see Safety Standards).
- Properly install and ground this equipment according to its Owner's Manual and national, state, and local codes.
- Always verify the supply ground – check and be sure that input power cord ground wire is properly connected to ground terminal in disconnect box or that cord plug is connected to a properly grounded receptacle outlet.
- When making input connections, attach proper grounding conductor first – double-check connections.
- Keep cords dry, free of oil and grease, and protected from hot metal and sparks.
- Frequently inspect input power cord for damage or bare wiring – replace cord immediately if damaged – bare wiring can kill.
- Turn off all equipment when not in use.
- Do not use worn, damaged, undersized, or poorly spliced cables.
- Do not drape cables over your body.
- If earth grounding of the workpiece is required, ground it directly with a separate cable.
- Do not touch electrode if you are in contact with the work, ground, or another electrode from a different machine.
- Do not touch electrode holders connected to two welding machines at the same time since double open-circuit voltage will be present.
- Use only well-maintained equipment. Repair or replace damaged parts at once. Maintain unit according to manual.
- Wear a safety harness if working above floor level.
- Keep all panels and covers securely in place.
- Clamp work cable with good metal-to-metal contact to workpiece or worktable as near the weld as practical.
- Insulate work clamp when not connected to workpiece to prevent contact with any metal object.
- Do not connect more than one electrode or work cable to any single weld output terminal.

SIGNIFICANT DC VOLTAGE exists in inverter welding power sources AFTER removal of inputpower.

- Turn Off inverter, disconnect input power, and discharge input capacitors according to instructions in Maintenance Section before touching any parts.

HOT PARTS can burn.

- Do not touch hot parts bare handed.
- Allow cooling period before working on equipment.
- To handle hot parts, use proper tools and/or wear heavy, insulated welding gloves and clothing to prevent burns.

FUMES AND GASES can be hazardous.

Welding produces fumes and gases. Breathing these fumes and gases can be hazardous to your health.

- Keep your head out of the fumes. Do not breathe the fumes.
- If inside, ventilate the area and/or use local forced ventilation at the arc to remove welding fumes and gases.
- If ventilation is poor, wear an approved air-supplied respirator.
- Read and understand the Material Safety Data Sheets (MSDSs) and the manufacturer's instructions for metals, consumables, coatings, cleaners, and degreasers.
- Work in a confined space only if it is well ventilated, or while wearing an air-supplied respirator. Always have a trained watch-person nearby. Welding fumes and gases can displace air and lower the oxygen level causing injury or death. Be sure the breathing air is safe.
- Do not weld in locations near degreasing, cleaning, or spraying operations. The heat and rays of the arc can react with vapors to form highly toxic and irritating gases.
- Do not weld on coated metals, such as galvanized, lead, or cadmium plated steel, unless the coating is removed from the weld area, the area is well ventilated, and while wearing an air-supplied respirator. The coatings and any metals containing these elements can give off toxic fumes if welded.

ARC RAYS can burn eyes and skin.

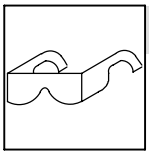
Arc rays from the welding process produce intense visible and invisible (ultraviolet and infrared) rays that can burn eyes and skin. Sparks fly off from the weld.

- Wear an approved welding helmet fitted with a proper shade of filter lenses to protect your face and eyes from arc rays and sparks when welding or watching (see ANSI Z49.1 and Z87.1 listed in Safety Standards).
- Wear approved safety glasses with side shields under your helmet.
- Use protective screens or barriers to protect others from flash, glare and sparks; warn others not to watch the arc.
- Wear protective clothing made from durable, flame-resistant material (leather, heavy cotton, or wool) and foot protection.

WELDING can cause fire or explosion.

Welding on closed containers, such as tanks, drums, or pipes, can cause them to blow up. Sparks can fly off from the welding arc. The flying sparks, hot workpiece, and hot equipment can cause fires and burns. Accidental contact of electrode to metal objects can cause sparks, explosion, overheating, or fire. Check and be sure the area is safe before doing any welding.

- Remove all flammables within 35 ft (10.7 m) of the welding arc. If this is not possible, tightly cover them with approved covers.
- Do not weld where flying sparks can strike flammable material.
- Protect yourself and others from flying sparks and hot metal.
- Be alert that welding sparks and hot materials from welding can easily go through small cracks and openings to adjacent areas.
- Watch for fire, and keep a fire extinguisher nearby.
- Be aware that welding on a ceiling, floor, bulkhead, or partition can cause fire on the hidden side.
- Do not weld on closed containers such as tanks, drums, or pipes, unless they are properly prepared according to AWS F4.1 (see Safety Standards).
- Do not weld where the atmosphere may contain flammable dust, gas, or liquid vapors (such as gasoline).
- Connect work cable to the work as close to the welding area as practical to prevent welding current from traveling long, possibly unknown paths and causing electric shock, sparks, and fire hazards.
- Do not use welder to thaw frozen pipes.
- Remove stick electrode from holder or cut off welding wire at contact tip when not in use.
- Wear oil-free protective garments such as leather gloves, heavy shirt, cuffless trousers, high shoes, and a cap.
- Remove any combustibles, such as a butane lighter or matches, from your person before doing any welding.
- After completion of work, inspect area to ensure it is free of sparks, glowing embers, and flames.
- Use only correct fuses or circuit breakers. Do not oversize or by-pass them.
- Follow requirements in OSHA 1910.252 (a) (2) (iv) and NFPA 51B for hot work and have a fire watcher and extinguisher nearby.



FLYING METAL or DIRT can injure eyes.

- Welding, chipping, wire brushing, and grinding cause sparks and flying metal. As welds cool, they can throw off slag.
- Wear approved safety glasses with side shields even under your welding helmet.

BUILDUP OF GAS can injure or kill.

- Shut off shielding gas supply when not in use.
- Always ventilate confined spaces or use approved air-supplied respirator.

MAGNETIC FIELDS can affect Implanted Medical Devices.

- Wearers of Pacemakers and other Implanted Medical Devices should keep away.
- Implanted Medical Device wearers should consult their doctor and the device manufacturer before going near arc welding, spot welding, gouging, plasma arc cutting, or induction heating operations.

NOISE can damage hearing.

Noise from some processes or equipment can damage hearing.

- Wear approved ear protection if noise level is high.

CYLINDERS can explode if damaged.

Shielding gas cylinders contain gas under high pressure. If damaged, a cylinder can explode. Since gas cylinders are normally part of the welding process, be sure to treat them carefully.

- Protect compressed gas cylinders from excessive heat, mechanical shocks, physical damage, slag, open flames, sparks, and arcs.
- Install cylinders in an upright position by securing to a stationary support or cylinder rack to prevent falling or tipping.
- Keep cylinders away from any welding or other electrical circuits.
- Never drape a welding torch over a gas cylinder.
- Never allow a welding electrode to touch any cylinder.
- Never weld on a pressurized cylinder – explosion will result.
- Use only correct shielding gas cylinders, regulators, hoses, and fittings designed for the specific application; maintain them and associated parts in good condition.
- Turn face away from valve outlet when opening cylinder valve.
- Keep protective cap in place over valve except when cylinder is in use or connected for use.
- Use the right equipment, correct procedures, and sufficient number of persons to lift and move cylinders.
- Read and follow instructions on compressed gas cylinders, associated equipment, and Compressed Gas Association (CGA) publication P-1 listed in Safety Standards.

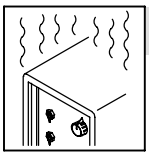
1-3. Additional Symbols For Installation, Operation, And Maintenance

FIRE OR EXPLOSION hazard.

- Do not install or place unit on, over, or near combustible surfaces.
- Do not install unit near flammables.
- Do not overload building wiring – be sure power supply system is properly sized, rated, and protected to handle this unit.

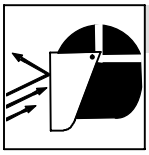
FALLING EQUIPMENT can injure.

- Use lifting eye to lift unit only, NOT running gear, gas cylinders, or any other accessories.
- Use equipment of adequate capacity to lift and support unit.
- If using lift forks to move unit, be sure forks are long enough to extend beyond opposite side of unit.
- Keep equipment (cables and cords) away from moving vehicles when working from an aerial location.
- Follow the guidelines in the Applications Manual for the Revised NIOSH Lifting Equation (Publication No. 94–110) when manually lifting heavy parts or equipment.



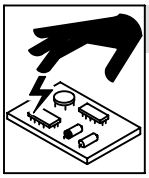
OVERUSE can cause OVERHEATING

- Allow cooling period; follow rated duty cycle.
- Reduce current or reduce duty cycle before starting to weld again.
- Do not block or filter airflow to unit.



FLYING SPARKS can injure.

- Wear a face shield to protect eyes and face.
- Shape tungsten electrode only on grinder with proper guards in a safe location wearing proper face, hand, and body protection.
- Sparks can cause fires — keep flammables away.



STATIC (ESD) can damage PC boards.

- Put on grounded wrist strap BEFORE handling boards or parts.
- Use proper static-proof bags and boxes to store, move, or ship PC boards.

MOVING PARTS can injure.

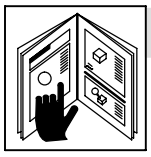
- Keep away from moving parts.
- Keep away from pinch points such as drive rolls.

WELDING WIRE can injure.

- Do not press gun trigger until instructed to do so.
- Do not point gun toward any part of the body, other people, or any metal when threading welding wire.

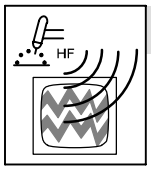
MOVING PARTS can injure.

- Keep away from moving parts such as fans.
- Keep all doors, panels, covers, and guards closed and securely in place.
- Have only qualified persons remove doors, panels, covers, or guards for maintenance and troubleshooting as necessary.
- Reinstall doors, panels, covers, or guards when maintenance is finished and before reconnecting input power.



READ INSTRUCTIONS.

- Read and follow all labels and the Owner's Manual carefully before installing, operating, or servicing unit. Read the safety information at the beginning of the manual and in each section.
- Use only genuine replacement parts from the manufacturer.
- Perform maintenance and service according to the Owner's Manuals, industry standards, and national, state, and local codes.



H.F. RADIATION can cause interference.

- High-frequency (H.F.) can interfere with radio navigation, safety services, computers, and communications equipment.
- Have only qualified persons familiar with electronic equipment perform this installation.
- The user is responsible for having a qualified electrician promptly correct any interference problem resulting from the installation.
- If notified by the FCC about interference, stop using the equipment at once.
- Have the installation regularly checked and maintained.
- Keep high-frequency source doors and panels tightly shut, keep spark gaps at correct setting, and use grounding and shielding to minimize the possibility of interference.

ARC WELDING can cause interference.

- Electromagnetic energy can interfere with sensitive electronic equipment such as computers and computer-driven equipment such as robots.
- Be sure all equipment in the welding area is electromagnetically compatible.
- To reduce possible interference, keep weld cables as short as possible, close together, and down low, such as on the floor.
- Locate welding operation 100 meters from any sensitive electronic equipment.
- Be sure this welding machine is installed and grounded according to this manual.
- If interference still occurs, the user must take extra measures such as moving the welding machine, using shielded cables, using line filters, or shielding the work area.

1-4. California Proposition 65 Warnings

Welding or cutting equipment produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code Section 25249.5 et seq.)

Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling.

For Gasoline Engines:

Engine exhaust contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

For Diesel Engines:

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

1-5. Principal Safety Standards

Safety in Welding, Cutting, and Allied Processes, ANSI Standard Z49.1, from Global Engineering Documents (phone: 1-877-413-5184, website: www.global.ihs.com).

Safe Practices for the Preparation of Containers and Piping for Welding and Cutting, American Welding Society Standard AWS F4.1, from Global Engineering Documents (phone: 1-877-413-5184, website: www.global.ihs.com).

National Electrical Code, NFPA Standard 70, from National Fire Protection Association, Quincy, MA 02269 (phone: 1-800-344-3555, website: www.nfpa.org and www. sparky.org).

Safe Handling of Compressed Gases in Cylinders, CGA Pamphlet P-1, from Compressed Gas Association, 4221 Walney Road, 5th Floor, Chantilly, VA 20151 (phone: 703-788-2700, website:www.cganet.com).

Safety in Welding, Cutting, and Allied Processes, CSA Standard W117.2, from Canadian Standards Association, Standards Sales, 5060 Spectrum Way, Suite 100, Ontario, Canada L4W 5NS (phone: 800-463-6727, website: www.csa-international.org).

Safe Practice For Occupational And Educational Eye And Face Protection, ANSI Standard Z87.1, from American National Standards Institute, 25 West 43rd Street, New York, NY 10036 (phone: 212-642-4900, website: www.ansi.org).

Standard for Fire Prevention During Welding, Cutting, and Other Hot Work, NFPA Standard 51B, from National Fire Protection Association, Quincy, MA 02269 (phone: 1-800-344-3555, website: www.nfpa.org.

OSHA, Occupational Safety and Health Standards for General Industry, Title 29, Code of Federal Regulations (CFR), Part 1910, Subpart Q, and Part 1926, Subpart J, from U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954 (phone: 1-866-512-1800) (there are 10 OSHA Regional Offices—phone for Region 5, Chicago, is 312-353-2220, website: www.osha.gov).

U.S. Consumer Product Safety Commission (CPSC), 4330 East West Highway, Bethesda, MD 20814 (phone: 301-504-7923, website: www.cpsc.gov).

Applications Manual for the Revised NIOSH Lifting Equation, The National Institute for Occupational Safety and Health (NIOSH), 1600 Clifton Rd, Atlanta, GA 30333 (phone: 1-800-232-4636, website: www.cdc.gov/NIOSH).

1-6. EMF Information

Considerations About Welding And The Effects Of Low Frequency Electric And Magnetic Fields

Welding current, as it flows through welding cables, will cause electromagnetic fields. There has been and still is some concern about such fields. However, after examining more than 500 studies spanning 17 years of research, a special blue ribbon committee of the National Research Council concluded that: “The body of evidence, in the committee’s judgment, has not demonstrated that exposure to power-frequency electric and magnetic fields is a human-health hazard.” However, studies are still going forth and evidence continues to be examined. Until the final conclusions of the research are reached, you may wish to minimize your exposure to electromagnetic fields when welding or cutting.

To reduce magnetic fields in the workplace, use the following procedures:

1. Keep cables close together by twisting or taping them, or using a cable cover.
2. Arrange cables to one side and away from the operator.
3. Do not coil or drape cables around your body.
4. Keep welding power source and cables as far away from operator as practical.
5. Connect work clamp to workpiece as close to the weld as possible.

About Implanted Medical Devices:
Implanted Medical Device wearers should consult their doctor and the device manufacturer before performing or going near arc welding, spot welding, gouging, plasma arc cutting, or induction heating operations. If cleared by your doctor, then following the above procedures is recommended.

SECTION 2 – CONSIGNES DE SÉCURITÉ – LIRE AVANT UTILISATION

Se protéger et protéger les autres contre le risque de blessure — lire et respecter ces consignes.

2-1. Symboles utilisés

DANGER! – Indique une situation dangereuse qui si on l'évite pas peut donner la mort ou des blessures graves. Les dangers possibles sont montrés par les symboles joints ou sont expliqués dans le texte.

Indique une situation dangereuse qui si on l'évite pas peut donner la mort ou des blessures graves. Les dangers possibles sont montrés par les symboles joints ou sont expliqués dans le texte.

***NOTE** – Indique des déclarations pas en relation avec des blessures personnelles.*

☞ *Indique des instructions spécifiques.*

Ce groupe de symboles veut dire Avertissement! Attention! DANGER DE CHOC ELECTRIQUE, PIECES EN MOUVEMENT, et PIECES CHAUDES. Consulter les symboles et les instructions ci-dessous y afférant pour les actions nécessaires afin d'éviter le danger.

2-2. Dangers relatifs au soudage à l'arc

Les symboles représentés ci-dessous sont utilisés dans ce manuel pour attirer l'attention et identifier les dangers possibles. En présence de l'un de ces symboles, prendre garde et suivre les instructions afférentes pour éviter tout risque. Les instructions en matière de sécurité indiquées ci-dessous ne constituent qu'un sommaire des instructions de sécurité plus complètes fournies dans les normes de sécurité énumérées dans la Section 2-5. Lire et observer toutes les normes de sécurité.

Seul un personnel qualifié est autorisé à installer, faire fonctionner, entretenir et réparer cet appareil.

Pendant le fonctionnement, maintenir à distance toutes les personnes, notamment les enfants de l'appareil.

UNE DÉCHARGE ÉLECTRIQUE peut entraîner la mort.

Le contact d'organes électriques sous tension peut provoquer des accidents mortels ou des brûlures graves. Le circuit de l'électrode et de la pièce est sous tension lorsque le courant est délivré à la sortie. Le circuit d'alimentation et les circuits internes de la machine sont également sous tension lorsque l'alimentation est sur Marche. Dans le mode de soudage avec du fil, le fil, le dérouleur, le bloc de commande du rouleau et toutes les parties métalliques en contact avec le fil sont sous tension électrique. Un équipement installé ou mis à la terre de manière incorrecte ou impropre constitue un danger.

- Ne pas toucher aux pièces électriques sous tension.
- Porter des gants isolants et des vêtements de protection secs et sans trous.
- S'isoler de la pièce à couper et du sol en utilisant des housses ou des tapis assez grands afin d'éviter tout contact physique avec la pièce à couper ou le sol.
- Ne pas se servir de source électrique à courant électrique dans les zones humides, dans les endroits confinés ou là où on risque de tomber.
- Se servir d'une source électrique à courant électrique UNIQUEMENT si le procédé de soudage le demande.
- Si l'utilisation d'une source électrique à courant électrique s'avère nécessaire, se servir de la fonction de télécommande si l'appareil en est équipé.
- D'autres consignes de sécurité sont nécessaires dans les conditions suivantes : risques électriques dans un environnement humide ou si l'on porte des vêtements mouillés ; sur des structures métalliques telles que sols, grilles ou échafaudages ; en position coincée comme assise, à genoux ou couchée ; ou s'il y a un risque élevé de contact inévitable ou accidentel avec la pièce à souder ou le sol. Dans ces conditions, utiliser les équipements suivants, dans l'ordre indiqué : 1) un poste à souder DC à tension constante (à fil), 2) un poste à souder DC manuel (électrode) ou 3) un poste à souder AC à tension à vide réduite. Dans la plupart des situations, l'utilisation d'un poste à souder DC à fil à tension constante est recommandée. En outre, ne pas travailler seul !
- Couper l'alimentation ou arrêter le moteur avant de procéder à l'installation, à la réparation ou à l'entretien de l'appareil. Déverrouiller l'alimentation selon la norme OSHA 29 CFR 1910.147 (voir normes de sécurité).
- Installer le poste correctement et le mettre à la terre convenablement selon les consignes du manuel de l'opérateur et les normes nationales, provinciales et locales.
- Toujours vérifier la terre du cordon d'alimentation. Vérifier et s'assurer que le fil de terre du cordon d'alimentation est bien raccordé à la borne de terre du sectionneur ou que la fiche du cordon est raccordée à une prise correctement mise à la terre.
- En effectuant les raccordements d'entrée, fixer d'abord le conducteur de mise à la terre approprié et contre-vérifier les connexions.
- Les câbles doivent être exempts d'humidité, d'huile et de graisse; protégez–les contre les étincelles et les pièces métalliques chaudes.
- Vérifier fréquemment le cordon d'alimentation afin de s'assurer qu'il n'est pas altéré ou à nu, le remplacer immédiatement s'il l'est. Un fil à nu peut entraîner la mort.
- L'équipement doit être hors tension lorsqu'il n'est pas utilisé.
- Ne pas utiliser des câbles usés, endommagés, de grosseur insuffisante ou mal épissés.
- Ne pas enrouler les câbles autour du corps.
- Si la pièce soudée doit être mise à la terre, le faire directement avec un câble distinct.
- Ne pas toucher l'électrode quand on est en contact avec la pièce, la terre ou une électrode provenant d'une autre machine.
- Ne pas toucher des porte électrodes connectés à deux machines en même temps à cause de la présence d'une tension à vide doublée.
- N'utiliser qu'un matériel en bon état. Réparer ou remplacer sur-le-champ les pièces endommagées. Entretenir l'appareil conformément à ce manuel.
- Porter un harnais de sécurité si l'on doit travailler au-dessus du sol.
- S'assurer que tous les panneaux et couvercles sont correctement en place.
- Fixer le câble de retour de façon à obtenir un bon contact métal-métal avec la pièce à souder ou la table de travail, le plus près possible de la soudure.
- Isoler la pince de masse quand pas mis à la pièce pour éviter le contact avec tout objet métallique.
- Ne pas raccorder plus d'une électrode ou plus d'un câble de masse à une même borne de sortie de soudage.

Il reste une TENSION DC NON NÉGLIGEABLE dans les sources de soudage onduleur quand on a coupé l'alimentation.

- Arrêter les convertisseurs, débrancher le courant électrique et décharger les condensateurs d'alimentation selon les instructions indiquées dans la partie Entretien avant de toucher les pièces.

DES PIÈCES CHAUDES peuvent provoquer des brûlures graves.

- Ne pas toucher à mains nues les parties chaudes.
- Prévoir une période de refroidissement avant de travailler à l'équipement.
- Ne pas toucher aux pièces chaudes, utiliser les outils recommandés et porter des gants de soudage et des vêtements épais pour éviter les brûlures.

LES FUMÉES ET LES GAZ peuvent être dangereux.

Le soudage génère des fumées et des gaz. Leur inhalation peut être dangereux pour votre santé.

- Eloigner votre tête des fumées. Ne pas respirer les fumées.
- À l'intérieur, ventiler la zone et/ou utiliser une ventilation forcée au niveau de l'arc pour l'évacuation des fumées et des gaz de soudage.
- Si la ventilation est médiocre, porter un respirateur anti-vapeurs approuvé.
- Lire et comprendre les spécifications de sécurité des matériaux (MSDS) et les instructions du fabricant concernant les métaux, les consommables, les revêtements, les nettoyants et les dégraisseurs.
- Travailler dans un espace fermé seulement s'il est bien ventilé ou en portant un respirateur à alimentation d'air. Demander toujours à un surveillant dûment formé de se tenir à proximité. Des fumées et des gaz de soudage peuvent déplacer l'air et abaisser le niveau d'oxygène provoquant des blessures ou des accidents mortels. S'assurer que l'air de respiration ne présente aucun danger.
- Ne pas souder dans des endroits situés à proximité d'opérations de dégraissage, de nettoyage ou de pulvérisation. La chaleur et les rayons de l'arc peuvent réagir en présence de vapeurs et former des gaz hautement toxiques et irritants.
- Ne pas souder des métaux munis d'un revêtement, tels que l'acier galvanisé, plaqué en plomb ou au cadmium à moins que le revêtement n'ait été enlevé dans la zone de soudure, que l'endroit soit bien ventilé, et en portant un respirateur à alimentation d'air. Les revêtements et tous les métaux renfermant ces éléments peuvent dégager des fumées toxiques en cas de soudage.

LES RAYONS DE L'ARC peuvent provoquer des brûlures dans les yeux et sur la peau.

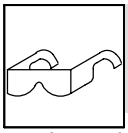
Le rayonnement de l'arc du procédé de soudage génère des rayons visibles et invisibles intenses (ultraviolets et infrarouges) susceptibles de provoquer des brûlures dans les yeux et sur la peau. Des étincelles sont projetées pendant le soudage.

- Porter un casque de soudage approuvé muni de verres filtrants approprié pour protéger visage et yeux pendant le soudage (voir ANSI Z49.1 et Z87.1 énuméré dans les normes de sécurité).
- Porter des lunettes de sécurité avec écrans latéraux même sous votre casque.
- Avoir recours à des écrans protecteurs ou à des rideaux pour protéger les autres contre les rayonnements les éblouissements et les étincelles ; prévenir toute personne sur les lieux de ne pas regarder l'arc.
- Porter des vêtements confectionnés avec des matières résistantes et ignifuges (cuir, coton lourd ou laine) et des bottes de protection.

LE SOUDAGE peut provoquer un incendie ou une explosion.

Le soudage effectué sur des conteneurs fermés tels que des réservoirs, tambours ou des conduites peut provoquer leur éclatement. Des étincelles peuvent être projetées de l'arc de soudure. La projection d'étincelles, des pièces chaudes et des équipements chauds peut provoquer des incendies et des brûlures. Le contact accidentel de l'électrode avec des objets métalliques peut provoquer des étincelles, une explosion, un surchauffement ou un incendie. Avant de commencer le soudage, vérifier et s'assurer que l'endroit ne présente pas de danger.

- Déplacer toutes les substances inflammables à une distance de 10,7 m de l'arc de soudage. En cas d'impossibilité les recouvrir soigneusement avec des protections homologués.
- Ne pas souder dans un endroit là où des étincelles peuvent tomber sur des substances inflammables.
- Se protéger et d'autres personnes de la projection d'étincelles et de métal chaud.
- Des étincelles et des matériaux chauds du soudage peuvent facilement passer dans d'autres zones en traversant de petites fissures et des ouvertures.
- Surveiller tout déclenchement d'incendie et tenir un extincteur à proximité.
- Le soudage effectué sur un plafond, plancher, paroi ou séparation peut déclencher un incendie de l'autre côté.
- Ne pas effectuer le soudage sur des conteneurs fermés tels que des réservoirs, tambours, ou conduites, à moins qu'ils n'aient été préparés correctement conformément à AWS F4.1 (voir les normes de sécurité).
- Ne soudez pas si l'air ambiant est chargé de particules, gaz, ou vapeurs inflammables (vapeur d'essence, par exemple).
- Brancher le câble de masse sur la pièce le plus près possible de la zone de soudage pour éviter le transport du courant sur une longue distance par des chemins inconnus éventuels en provoquant des risques d'électrocution, d'étincelles et d'incendie.
- Ne pas utiliser le poste de soudage pour dégeler des conduites gelées.
- En cas de non utilisation, enlever la baguette d'électrode du porte-électrode ou couper le fil à la pointe de contact.
- Porter des vêtements de protection dépourvus d'huile tels que des gants en cuir, une chemise en matériau lourd, des pantalons sans revers, des chaussures hautes et un couvre chef.
- Avant de souder, retirer toute substance combustible de vos poches telles qu'un allumeur au butane ou des allumettes.
- Une fois le travail achevé, assurez–vous qu'il ne reste aucune trace d'étincelles incandescentes ni de flammes.
- Utiliser exclusivement des fusibles ou coupe–circuits appropriés. Ne pas augmenter leur puissance; ne pas les ponter.
- Une fois le travail achevé, assurez–vous qu'il ne reste aucune trace d'étincelles incandescentes ni de flammes.
- Utiliser exclusivement des fusibles ou coupe–circuits appropriés. Ne pas augmenter leur puissance; ne pas les ponter.
- Suivre les recommandations dans OSHA 1910.252(a)(2)(iv) et NFPA 51B pour les travaux à chaud et avoir de la surveillance et un extincteur à proximité.



DES PIECES DE METAL ou DES SALETES peuvent provoquer des blessures dans les yeux.

- Le soudage, l'écaillement, le passage de la pièce à la brosse en fil de fer, et le meulage génèrent des étincelles et des particules métalliques volantes. Pendant la période de refroidissement des soudures, elles risquent de projeter du laitier.
- Porter des lunettes de sécurité avec écrans latéraux ou un écran facial.

LES ACCUMULATIONS DE GAZ risquent de provoquer des blessures ou même la mort.

- Fermer l'alimentation du gaz protecteur en cas de non-utilisation.
- Veiller toujours à bien aérer les espaces confinés ou se servir d'un respirateur d'adduction d'air homologué.

LES CHAMPS MAGNETIQUES peuvent affecter des implants médicaux.

- Porteur de simulateur cardiaque ou autre implants médicaux, rester à distance.
- Les porteurs d'implants doivent d'abord consulter leur médecin avant de s'approcher des opérations de soudage à l'arc, de soudage par points, de gougeage, du coupage plasma ou de chauffage par induction.

LE BRUIT peut endommager l'ouïe.

Le bruit des processus et des équipements peut affecter l'ouïe.

- Porter des protections approuvées pour les oreilles si le niveau sonore est trop élevé.

LES BOUTEILLES peuvent exploser si elles sont endommagées.

Des bouteilles de gaz protecteur contiennent du gaz sous haute pression. Si une bouteille est endommagée, elle peut exploser. Du fait que les bouteilles de gaz font normalement partie du procédé de soudage, les manipuler avec précaution.

- Protéger les bouteilles de gaz comprimé d'une chaleur excessive, des chocs mécaniques, des dommages physiques, du laitier, des flammes ouvertes, des étincelles et des arcs.
- Placer les bouteilles debout en les fixant dans un support stationnaire ou dans un porte-bouteilles pour les empêcher de tomber ou de se renverser.
- Tenir les bouteilles éloignées des circuits de soudage ou autres circuits électriques.
- Ne jamais placer une torche de soudage sur une bouteille à gaz.
- Une électrode de soudage ne doit jamais entrer en contact avec une bouteille.
- Ne jamais souder une bouteille pressurisée – risque d'explosion.
- Utiliser seulement des bouteilles de gaz protecteur, régulateurs, tuyaux et raccords convenables pour cette application spécifique ; les maintenir ainsi que les éléments associés en bon état.
- Détourner votre visage du détendeur-régulateur lorsque vous ouvrez la soupape de la bouteille.
- Le couvercle du détendeur doit toujours être en place, sauf lorsque la bouteille est utilisée ou qu'elle est reliée pour usage ultérieur.
- Utiliser les équipements corrects, les bonnes procédures et suffisamment de personnes pour soulever et déplacer les bouteilles.
- Lire et suivre les instructions sur les bouteilles de gaz comprimé, l'équipement connexe et le dépliant P-1 de la CGA (Compressed Gas Association) mentionné dans les principales normes de sécurité.

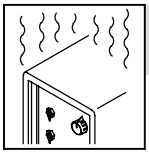
2-3. Dangers supplémentaires en relation avec l'installation, le fonctionnement et la maintenance

Risque D'INCENDIE OU D'EXPLOSION.

- Ne pas placer l'appareil sur, au-dessus ou à proximité de surfaces inflammables.
- Ne pas installer l'appareil à proximité de produits inflammables.
- Ne pas surcharger l'installation électrique – s'assurer que l'alimentation est correctement dimensionnée et protégée avant de mettre l'appareil en service.

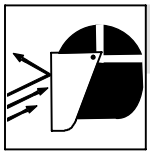
LA CHUTE DE L'APPAREIL peut blesser.

- Utiliser l'anneau de levage uniquement pour soulever l'appareil, NON PAS les chariots, les bouteilles de gaz ou tout autre accessoire.
- Utiliser un équipement de levage de capacité suffisante pour lever l'appareil.
- En utilisant des fourches de levage pour déplacer l'unité, s'assurer que les fourches sont suffisamment longues pour dépasser du côté opposé de l'appareil.



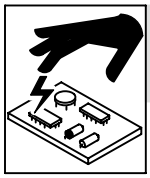
L'EMPLOI EXCESSIF peut SURCHAUFFER L'ÉQUIPEMENT.

- Prévoir une période de refroidissement ; respecter le cycle opératoire nominal.
- Réduire le courant ou le facteur de marche avant de poursuivre le soudage.
- Ne pas obstruer les passages d'air du poste.



LES ÉTINCELLES VOLANTES risquent de provoquer des blessures.

- Porter un écran facial pour protéger le visage et les yeux.
- Affûter l'électrode au tungstène uniquement à la meuleuse dotée de protecteurs. Cette manœuvre est à exécuter dans un endroit sûr lorsque l'on porte l'équipement homologué de protection du visage, des mains et du corps.
- Les étincelles risquent de causer un incendie – éloigner toute substance inflammable.



LES CHARGES ÉLECTROSTATIQUES peuvent endommager les circuits imprimés.

- Établir la connexion avec la barrette de terre avant de manipuler des cartes ou des pièces.
- Utiliser des pochettes et des boîtes antistatiques pour stocker, déplacer ou expédier des cartes de circuits imprimes.

DES ORGANES MOBILES peuvent provoquer des blessures.

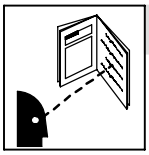
- Ne pas s'approcher des organes mobiles.
- Ne pas s'approcher des points de coincement tels que des rouleaux de commande.

LES FILS DE SOUDAGE peuvent provoquer des blessures.

- Ne pas appuyer sur la gâchette avant d'en avoir reçu l'instruction.
- Ne pas diriger le pistolet vers soi, d'autres personnes ou toute pièce mécanique en engageant le fil de soudage.

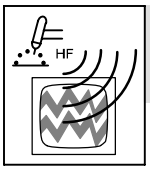
DES ORGANES MOBILES peuvent provoquer des blessures.

- S'abstenir de toucher des organes mobiles tels que des ventilateurs.
- Maintenir fermés et verrouillés les portes, panneaux, recouvrements et dispositifs de protection.
- Seules des personnes qualifiées sont autorisées à enlever les portes, panneaux, recouvrements ou dispositifs de protection pour l'entretien.
- Remettre les portes, panneaux, recouvrements ou dispositifs de protection quand l'entretien est terminé et avant de rebrancher l'alimentation électrique.



LIRE LES INSTRUCTIONS.

- Lisez le manuel d'instructions avant l'utilisation ou la maintenance de l'appareil.
- N'utiliser que les pièces de rechange recommandées par le constructeur.
- Effectuer régulièrement le contrôle et l'entretien de l'installation.
- Maintenir soigneusement fermés les portes et les panneaux des sources de haute fréquence, maintenir les éclateurs à une distance correcte et utiliser une terre et un blindage pour réduire les interférences éventuelles.



LE RAYONNEMENT HAUTE FRÉQUENCE (H.F.) risque de provoquer des interférences.

- Le rayonnement haute fréquence (H.F.) peut provoquer des interférences avec les équipements de radio–navigation et de communication, les services de sécurité et les ordinateurs.
- Demander seulement à des personnes qualifiées familiarisées avec des équipements électroniques de faire fonctionner l'installation.
- L'utilisateur est tenu de faire corriger rapidement par un électricien qualifié les interférences résultant de l'installation.
- Si le FCC signale des interférences, arrêter immédiatement l'appareil.

LE SOUDAGE À L'ARC risque de provoquer des interférences.

- L'énergie électromagnétique risque de provoquer des interférences pour l'équipement électronique sensible tel que les ordinateurs et l'équipement commandé par ordinateur tel que les robots.
- Veiller à ce que tout l'équipement de la zone de soudage soit compatible électromagnétiquement.
- Pour réduire la possibilité d'interférence, maintenir les câbles de soudage aussi courts que possible, les grouper, et les poser aussi bas que possible (ex. par terre).
- Veiller à souder à une distance de 100 mètres de tout équipement électronique sensible.
- Veiller à ce que ce poste de soudage soit posé et mis à la terre conformément à ce mode d'emploi.
- En cas d'interférences après avoir pris les mesures précédentes, il incombe à l'utilisateur de prendre des mesures supplémentaires telles que le déplacement du poste, l'utilisation de câbles blindés, l'utilisation de filtres de ligne ou la pose de protecteurs dans la zone de travail.

2-4. Proposition californienne 65 Avertissements

Les équipements de soudage et de coupage produisent des fumées et des gaz qui contiennent des produits chimiques dont l'État de Californie reconnaît qu'ils provoquent des malformations congénitales et, dans certains cas, des cancers. (Code de santé et de sécurité de Californie, chapitre 25249.5 et suivants)

Les batteries, les bornes et autres accessoires contiennent du plomb et des composés à base de plomb, produits chimiques dont l'État de Californie reconnaît qu'ils provoquent des cancers et des malformations congénitales ou autres problèmes de procréation. Se laver les mains après manipulation.

Pour les moteurs à essence :

Les gaz d'échappement des moteurs contiennent des produits chimiques dont l'État de Californie reconnaît qu'ils provoquent des cancers et des malformations congénitales ou autres problèmes de procréation.

Pour les moteurs diesel :

Les gaz d'échappement des moteurs diesel et certains de leurs composants sont reconnus par l'État de Californie comme provoquant des cancers et des malformations congénitales ou autres problèmes de procréation.

2-5. Principales normes de sécurité

Safety in Welding, Cutting, and Allied Processes, ANSI Standard Z49.1, de Global Engineering Documents (téléphone : 1-877-413-5184, site Internet : www.global.ihs.com).

Recommended Safe Practices for the Preparation for Welding and Cutting of Containers and Piping, American Welding Society Standard AWS F4.1 de Global Engineering Documents (téléphone : 1-877-413-5184, site Internet : www.global.ihs.com).

National Electrical Code, NFPA Standard 70, de National Fire Protection Association, P.O. Box 9101, Quincy, MA 02269-9101 (téléphone : 617-770-3000, site Internet : www.nfpa.org).

Safe Handling of Compressed Gases in Cylinders, CGA Pamphlet P-1, de Compressed Gas Association, 4221 Walney Road, 5th Floor, Chantilly, VA 20151 (téléphone : 703-788-2700, site Internet : www.cganet.com).

Code for Safety in Welding and Cutting, CSA Standard W117.2, de Canadian Standards Association, 5060 Mississauga, Ontario, Canada L4W 5NS (téléphone : 800-463-6727 ou à Toronto 416-747-4044, site Internet : www.csa-international.org).

Safe Practice For Occupational And Educational Eye And Face Protection, ANSI Standard Z87.1, de American National Standards Institute, 11 West 43rd Street, New York, NY 10036-8002 (téléphone : 212-642-4900, site Internet : www.ansi.org).

Standard for Fire Prevention During Welding, Cutting, and Other Hot Work, NFPA Standard 51B, de National Fire Protection Association, P.O. Box 9101, Quincy, MA 02269-9101 (téléphone : 617-770-3000, site Internet : www.nfpa.org).

OSHA, Occupational Safety and Health Standards for General Industry, Title 29, Code of Federal Regulations (CFR), Part 1910, Subpart Q, and Part 1926, Subpart J, de U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954 (téléphone : 1-866-512-1800) (il y a 10 bureaux régionaux––le téléphone de la région 5, Chicago, est 312-353-2220, site Internet : www.osha.gov).

2-6. Information EMF

Considérations sur le soudage et les effets de basse fréquence et des champs magnétiques et électriques.

Le courant de soudage, pendant son passage dans les câbles de soudage, causera des champs électromagnétiques. Il y a eu et il y a encore un certain souci à propos de tels champs. Cependant, après avoir examiné plus de 500 études qui ont été faites pendant une période de recherche de 17 ans, un comité spécial ruban bleu du National Research Council a conclu : « L'accumulation de preuves, suivant le jugement du comité, n'a pas démontré que l'exposition aux champs magnétiques et champs électriques à haute fréquence représente un risque à la santé humaine ». Toutefois, des études sont toujours en cours et les preuves continuent à être examinées. En attendant que les conclusions finales de la recherche soient établies, il vous serait souhaitable de réduire votre exposition aux champs électromagnétiques pendant le soudage ou le coupage.

Pour réduire les champs magnétiques sur le poste de travail, appliquer les procédures suivantes :

1. Garder les câbles ensemble, les torsader, les scotcher, ou les recouvrir d'une housse.
2. Disposer les câbles d'un côté et à distance de l'opérateur.
3. Ne pas courber pas et ne pas entourer pas les câbles autour de votre corps.
4. Garder le poste de soudage et les câbles le plus loin possible de vous.
5. Connecter la pince sur la pièce aussi près que possible de la soudure.

En ce qui concerne les implants médicaux :

Les porteurs d'implants doivent d'abord consulter leur médecin avant de s'approcher des opérations de soudage à l'arc, de soudage par points, de gougeage, du coupage plasma ou de chauffage par induction. Si le médecin approuve, il est recommandé de suivre les procédures précédentes.

SECTION 3 – INSTALLATION

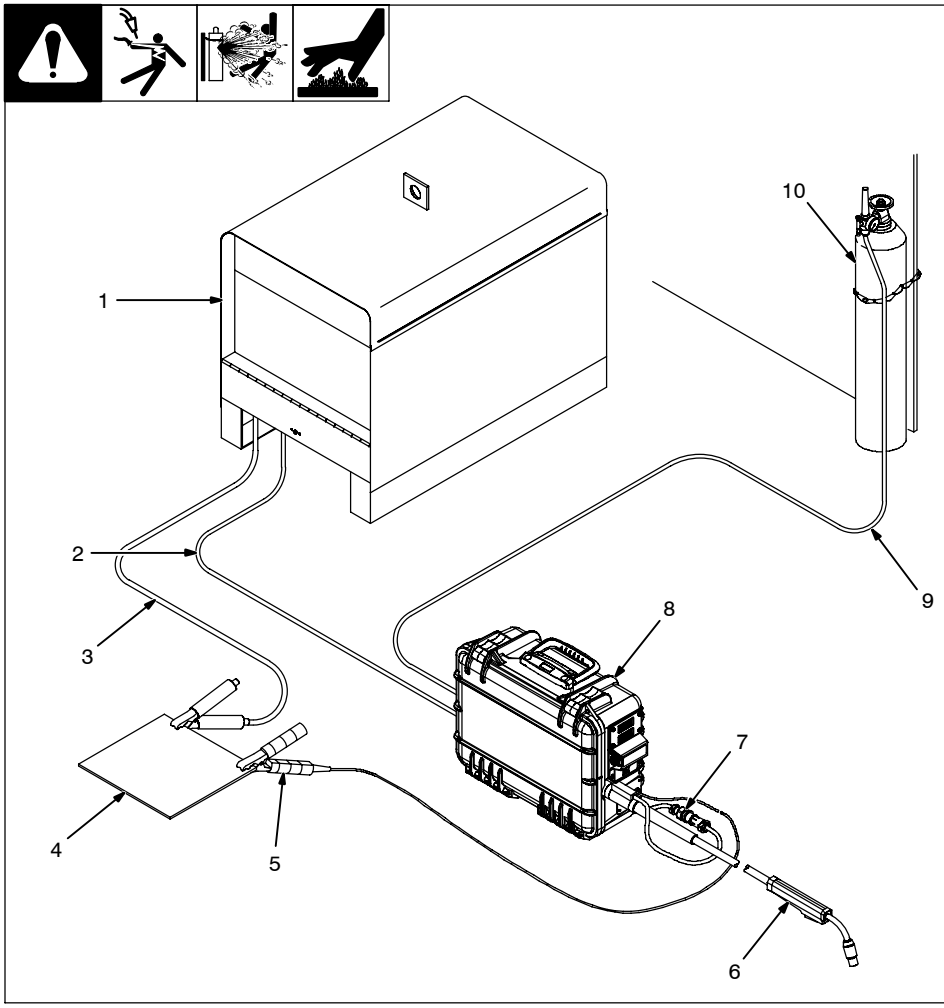
3-1. Specifications

Type of Input Power	Welding Power Source Type	Wire Feed Speed Range	Wire Diameter Range	Input Welding Circuit Rating	IP Rating	Max. Wire Spool Capacity	Overall Dimensions	Weight
Open-Circuit/ Arc Voltage, 14 – 110 Volts DC	Constant Voltage (CV) DC Power Source Only	50 – 780 ipm (1.3 – 19.8 mpm) Depending On Arc Voltage	*Solid Steel: .023 – .062 in. (0.6 – 1.6 mm); Stainless Steel: .023 – .052 in. (0.6 – 1.3 mm); Flux Cored: .030 – .062 in. (0.8 – 1.6 mm)	330 Amperes At 60% Duty Cycle	23	14 lb (6.4 kg), 8 in. (203 mm)	Length: 18 in. (457 mm) Width: 7-1/4 in. (184 mm) Height: 12-3/4 in. (324 mm)	28 lb (13 kg)
*Maximum gun length is 10 ft. for solid steel .062 in. wire.								

3-2. Gun Recommendation Table

Process	Gun
GMAW – Hard or Cored Wires	Bernard Q300 or Q400
FCAW – Self-Shielding Wires	FC-1260 Dura-Flux

3-3. Equipment Connection Diagram



Turn Off wire feeder and welding power source. Stop engine on welding generator.

Use only with CV DC Power Sources.

1 Constant Voltage (CV) Welding Power Supply

2 Weld Cable To Feeder

3 Ground Cable To Workpiece

Weld cable and ground cable connections to power source (DCEN/ DCEP) are dependant on wire type.

☞ *Since feeder is not polarity sensitive, there is no need for an electrode polarity switch.*

4 Workpiece

5 Voltage Sensing Clamp

Connect voltage sensing clamp to workpiece.

6 Gun

7 Gun Trigger Receptacle

8 Wire Feeder

9 Gas Hose

10 Gas Cylinder

Use of shielding gas is dependant on wire type.

☞ *Shielding gas pressure not to exceed 100 psi (689 kPa).*

Ref. 805 167-A

3-4. WCC (Weld Cable Control) Applications

☞ *The Suitcase X-TREME WCC wire feeder may be used with a WCC compatible welding power source or a Non-WCC compatible DC−CV welding power source. The wire feeder will not operate properly with a DC−CC welding power source (See Section 3-6).*

3-5. Associating Wire Feeder To WCC Compatible Power Source

Quick Setup Guide:

1 Pull trigger on gun.
2 Do not strike an arc.
3 Decimal points on feeder voltmeter will blink.
4 When decimal points stop blinking and a voltage is displayed, the feeder and power source are associated.
5 Use voltage control on feeder to adjust weld voltage.
6 Voltmeter on feeder will display preset voltage while idle, and actual weld voltage at feeder while welding.

☞ *See Section 3-6 for detailed equipment setup.*

3-6. Equipment Setup

☞ *To use the WCC feature, the wire feeder and power source must be WCC compatible. The power source should have WCC on the front panel nameplate, such as "NT 456 CC/CV WCC".*

During WCC operation, preset weld voltage and wire feed speed are set at the wire feeder front panel. Voltage control is disabled at the welding power source.

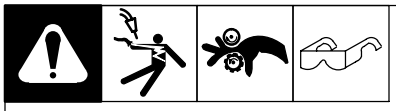
Associating a WCC compatible wire feeder and power source:

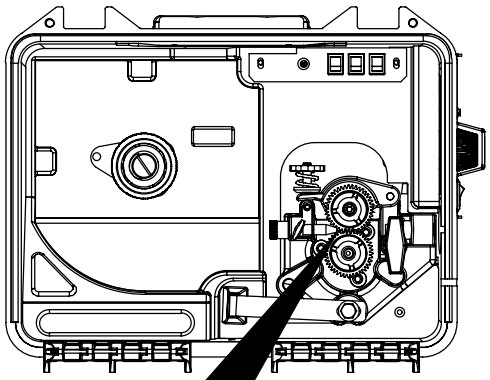
1 On power source set Mode Switch to V−SENSE FEEDER (WCC) position. Set Panel/Remote Control Switch to either PANEL or REMOTE position.
2 After connecting wire feeder to welding power source (see Section 3-3) turn on both pieces of equipment.
3 The welding power source voltage display alternates between preset voltage (set at the welding power source) and open circuit voltage. The wire feeder voltage display will show three dashes and three decimal points.
4 For the wire feeder to control the welding power source, both pieces of equipment must be associated. If wire feeder is not associated to the welding power source, the wire feeder will try to associate to a welding powersource when the trigger is pulled. To associate wire feeder to the welding power source, pull and hold the welding gun trigger − DO NOT STRIKE AN ARC. While the association process is taking place the decimal points on the wire feeder voltage display will blink. When associated, the decimal points stop blinking and preset voltage is displayed. Release trigger on welding gun after preset voltage is displayed. The association process may take up to five seconds to complete.
5 Once association is complete the wire feeder displays preset voltage. Voltage display on welding power source alternates between preset voltage (set by wire feeder) and open circuit voltage. Preset voltages, between wire feeder and welding power source, should be within 0.5 volt of each other.
6 While welding, the welding power source displays weld voltage at the studs. The wire feeder displays weld voltage at wire feeder.
7 While welding, due to voltage drops in the weld cable, voltage displays at wire feeder and welding power source will not match. The preset voltage at wire feeder must be set to a higher value to compensate for voltage drop of the weld cable. For example, if welding voltage of 18 volts is desired at the wire feeder and there is a 4 volt drop in the weld cable, the preset voltage at the wire feeder should be 22 volts. (18V + 4V = 22V).
8 Once wire feeder and welding power source are associated, they will stay associated until either unit is turned off. The wire feeder can lose power for up to ten seconds and still recover its association with the welding power source. This is for situations where the wire feeder may momentarily lose power due to a prolonged short circuit condition in the welding process.

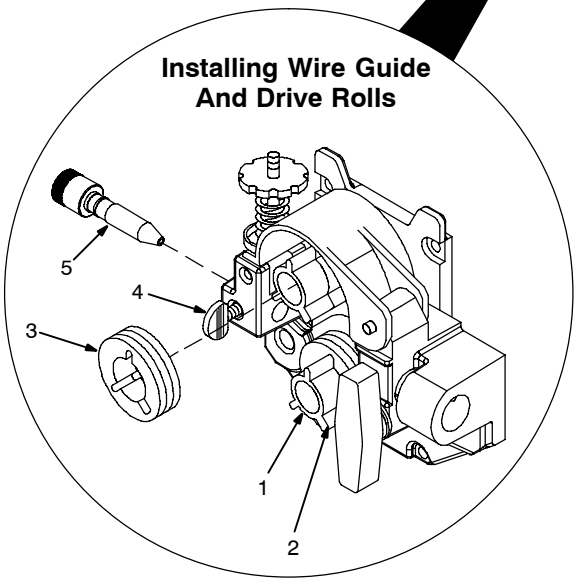
Using a WCC compatible wire feeder with a non-WCC compatible power source:

1 Wire feeder may be used with any constant voltage DC welding power source.
2 Set welding power source to Constant Voltage (CV) mode.
3 The wire feeder will not operate properly when used with a DC−CC welding power source.
4 The wire feeder will automatically work on a non−WCC compatible welding power source. There are no switches or jumpers to change.
5 WCC features will not be available.
6 The voltage knob on front panel will be non-functional.
7 When not welding, the voltage display on the wire feeder will show three dashes and three decimal points, not preset or open circuit voltage.
8 While welding, the voltage display on the wire feeder will display weld voltage at the wire feeder.

3-7. Installing And Aligning Wire Guide And Drive Rolls







Installing Wire Guide And Drive Rolls:

1 Drive Roll Securing Nut

2 Drive Roll Carrier

Turn nut one click until lobes of nut line up with lobes of drive roll carrier.

3 Drive Roll

Slide drive roll onto drive roll carrier. Turn nut one click.

Repeat procedure for top drive roll.

4 Inlet Wire Guide Screw

5 Inlet Wire Guide

Loosen securing screw. Install inlet guide so inlet guide screw is centered in groove in guide, or so tip is as close to drive rolls as possible without touching. Tighten screw.

Aligning Wire Guide And Drive Rolls:

View is from top of drive rolls looking down with pressure assembly open.

6 Drive Roll Securing Nut

7 Drive Roll

8 Inlet Wire Guide

9 Welding Wire

10 Drive Gear

Turn screw in or out until drive roll groove lines up with wire guide.

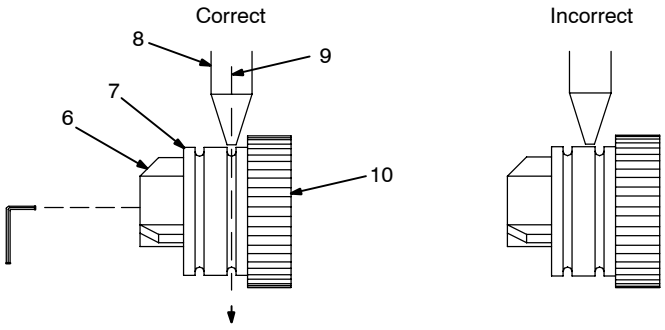
Close pressure roll assembly.

Only bottom drive roll alignment is adjustable. Turn adjustment screw in or out until groove in drive roll lines up with wire guide as shown.

Cleaning Drive Rolls:

Remove drive rolls, and clean grooves using a wire brush.

Aligning Wire Guide And Drive Rolls

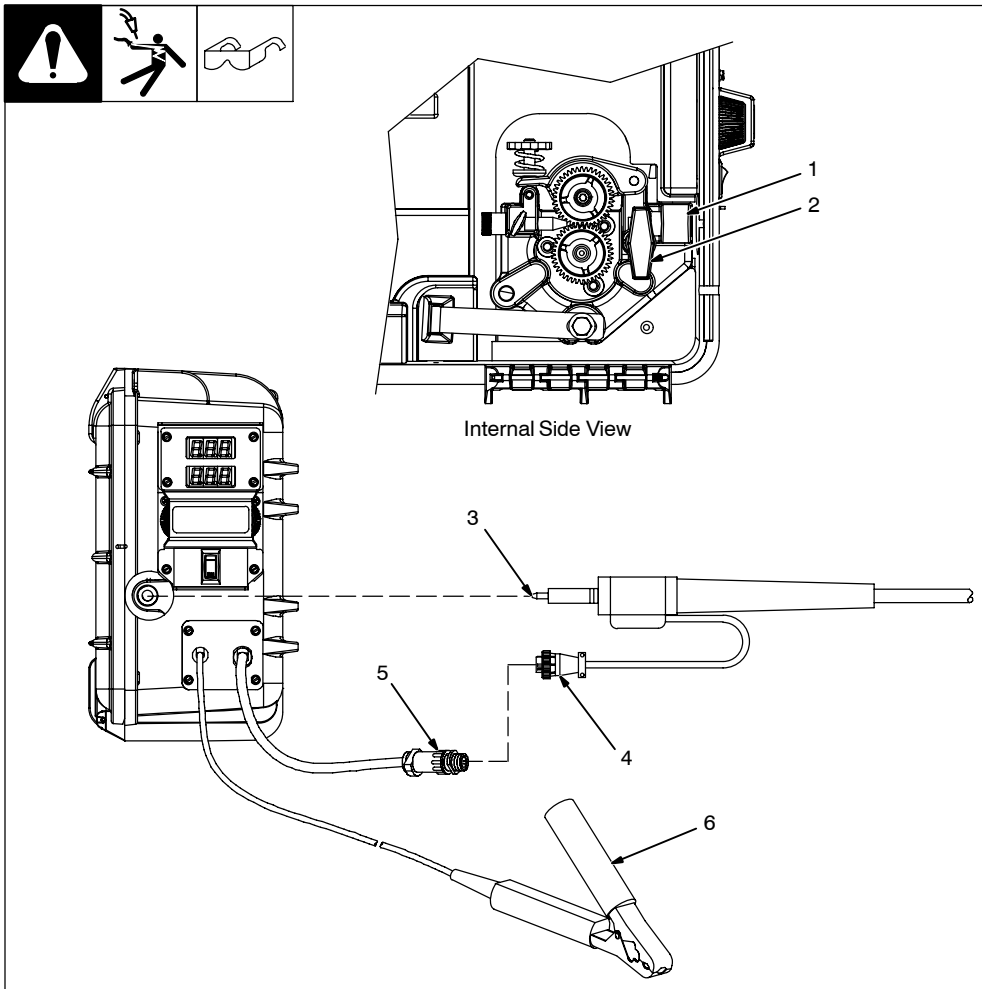


Tools Needed:

3/16 in

Ref. 804 210-B / 805 168-A

3-8. Connecting Welding Gun And Voltage Sensing Clamp



Turn Off wire feeder and welding power source. Stop engine on welding generator.

1 Gun Block

2 Gun Securing Knob

3 Gun Power Pin

Loosen knob, insert gun end into block. Position power pin as close as possible to drive rolls without touching. Tighten knob.

4 Gun Trigger Plug

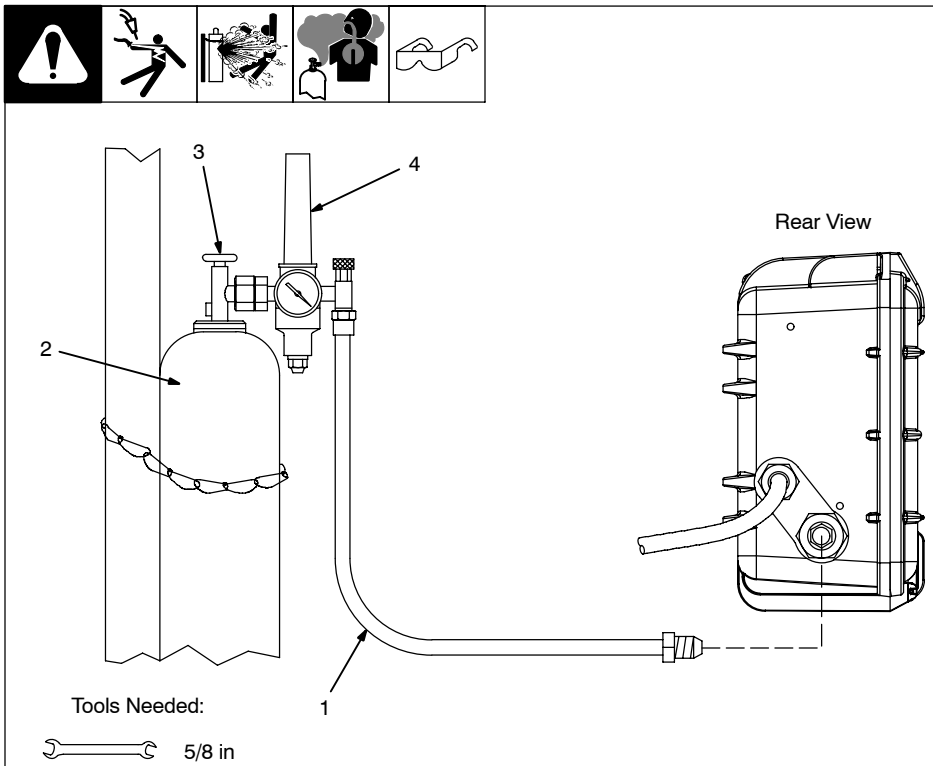
5 Gun Trigger Receptacle

6 Voltage Sensing Clamp

Connect voltage sensing clamp to workpiece.

Ref. 805 168-A / 805 169-A

3-9. Connecting Shielding Gas



1 Gas Hose With 5/8-18 Right-hand Thread Fittings (Customer Supplied)

2 Shielding Gas Cylinder

☞ *Shielding gas pressure not to exceed 100 psi (689 kPa).*

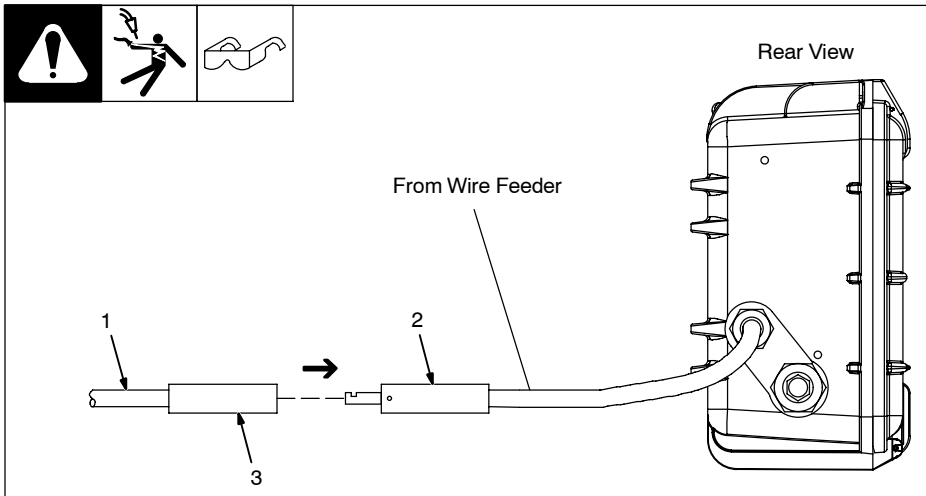
3 Valve

4 Flowmeter

Close valve on cylinder when finished welding.

Ref. 804 420-A

3-10. Connecting Weld Cable



Turn Off wire feeder and welding power source. Stop engine on welding generator.

1 User-Supplied Weld Cable

Follow wire manufacturer's recommendations for weld cable polarity.

2 User-Supplied Male Connector

3 User-Supplied Female Connector

Push female connector over male connector, and turn 1/4 turn clockwise.

804 421-A

3-11. Weld Cable Sizes

NOTICE *– The Total Cable Length in Weld Circuit (see table below) is the combined length of both weld cables. For example, if the power source is 100 ft (30 m) from the workpiece, the total cable length in the weld circuit is 200 ft (2 cables x 100 ft). Use the 200 ft (60 m) column to determine cable size.*

Weld Output Terminals

Turn off power before connecting to weld output terminals.

Do not use worn, damaged, undersized, or poorly spliced cables.

Welding Amperes	Weld Cable Size** and Total Cable (Copper) Length in Weld Circuit Not Exceeding***							
	100 ft (30 m) or Less		150 ft (45 m)	200 ft (60 m)	250 ft (70 m)	300 ft (90 m)	350 ft (105 m)	400 ft (120 m)
	10 – 60% Duty Cycle	60 – 100% Duty Cycle	10 – 100% Duty Cycle					
100	4 (20)	4 (20)	4 (20)	3 (30)	2 (35)	1 (50)	1/0 (60)	1/0 (60)
150	3 (30)	3 (30)	2 (35)	1 (50)	1/0 (60)	2/0 (70)	3/0 (95)	3/0 (95)
200	3 (30)	2 (35)	1 (50)	1/0 (60)	2/0 (70)	3/0 (95)	4/0 (120)	4/0 (120)
250	2 (35)	1 (50)	1/0 (60)	2/0 (70)	3/0 (95)	4/0 (120)	2 ea. 2/0 (2x70)	2 ea. 2/0 (2x70)
300	1 (50)	1/0 (60)	2/0 (70)	3/0 (95)	4/0 (120)	2 ea. 2/0 (2x70)	2 ea. 3/0 (2x95)	2 ea. 3/0 (2x95)
350	1/0 (60)	2/0 (70)	3/0 (95)	4/0 (120)	2 ea. 2/0 (2x70)	2 ea. 3/0 (2x95)	2 ea. 3/0 (2x95)	2 ea. 4/0 (2x120)
400	1/0 (60)	2/0 (70)	3/0 (95)	4/0 (120)	2 ea. 2/0 (2x70)	2 ea. 3/0 (2x95)	2 ea. 4/0 (2x120)	2 ea. 4/0 (2x120)
500	2/0 (70)	3/0 (95)	4/0 (120)	2 ea. 2/0 (2x70)	2 ea. 3/0 (2x95)	2 ea. 4/0 (2x120)	3 ea. 3/0 (3x95)	3 ea. 3/0 (3x95)

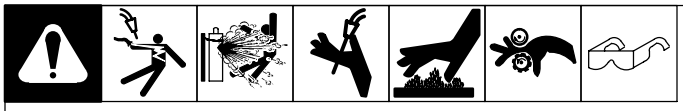
* This chart is a general guideline and may not suit all applications. If cable overheats, use next size larger cable.

**Weld cable size (AWG) is based on either a 4 volts or less drop or a current density of at least 300 circular mils per ampere.
( ) = mm^2 for metric use

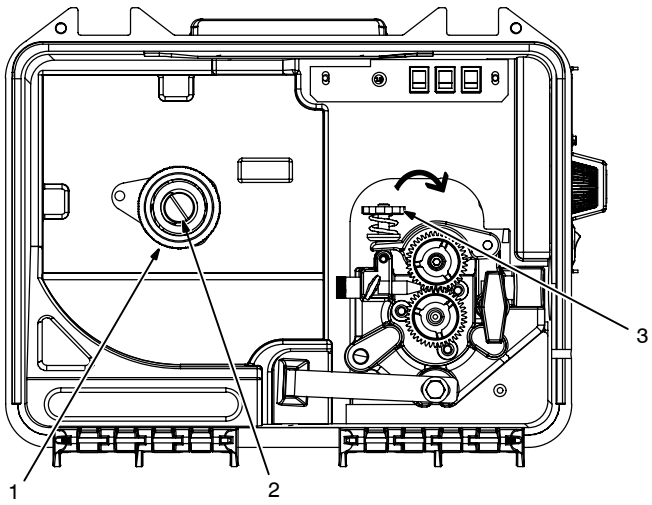
S-0007-F–

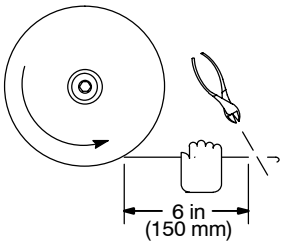
***For distances longer than those shown in this guide, call a factory applications representative at 920-735-4505.

3-12. Installing And Threading Welding Wire

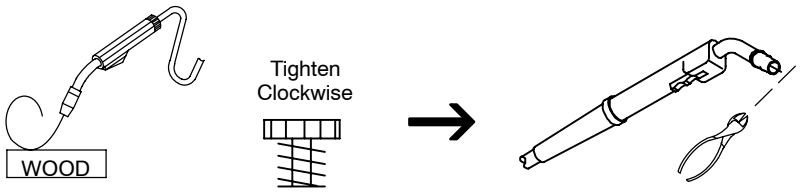


☞ *Hold wire tightly to keep it from unraveling.*





Pull and hold wire; cut off end.



Installing Wire And Adjusting Hub Tension:

1 Retaining Nut

2 Hub Tension Adjustment Knob

Remove retaining ring, and install spool so hub pin fits spool hole. Reinstall retaining nut.

Adjust tension knob so only a slight force is needed to turn spool.

☞ *Do not over tighten tension knob. It is not necessary to use any tools to tighten the knob.*

Threading Welding Wire:

3 Pressure Assembly Adjustment Knob

Lay gun cable out straight.

Open pressure assembly, hold wire tightly, and cut off end. Push wire through guides into gun.

Close and tighten pressure assembly. Press jog switch until wire comes out gun.

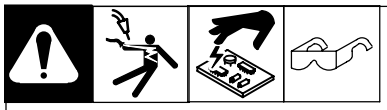
To set the proper drive roll tension, release the tension on the drive rolls. Position gun at about a 45 degree angle, with nozzle about two inches from a wooden surface. Increase the tension while feeding the wire against the wooden surface to one half turn past the point where the wire stops slipping. If the wire slips at maximum hand tight tension there may be other problems. Check the gun liner, spool tension, contact tips, drive roll wear, drive roll alignment and inlet guide as all these can cause feeding problems.

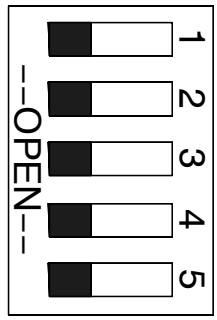
Cut off wire, and close door.

Ref. 805 168-A

Notes

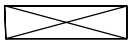
3-13. Display Board (PC22) DIP Switch Settings





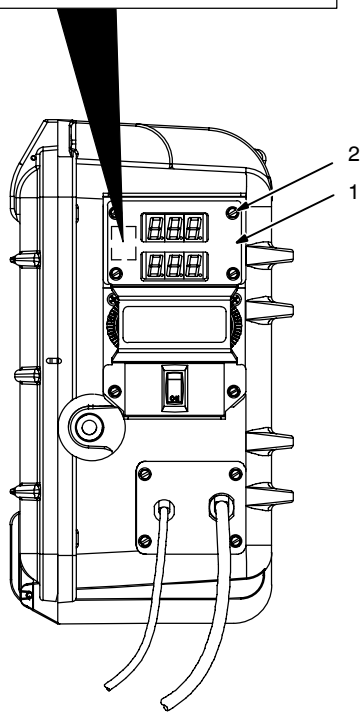
Factory DIP Switch Settings

☞ *All factory DIP switch settings are set to the OPEN or OFF positions.*



Indicates Switch does not Affect This Function

Indicates Switch is set to OPEN or OFF Position



Accessing DIP Switch

1 Lens

DIP switch is located under the lens next to the displays.

2 Lens Screws

Remove three screws.

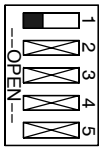
Loosen upper right hand screw to rotate lens enough to access DIP switch.

Replace three screws removed earlier.

Tighten upper right hand screw.

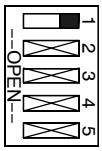
☞ *The two upper screws must engage the backing plate to properly secure the front panel.*

DIP Switch Settings:



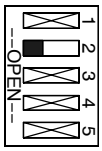
Display Hold ON

Displays will hold their last value for five seconds after the trigger is released. The voltage displayed while welding is an average reading over a time span of 6 to 8 seconds. If the weld time is less than 8 seconds, the voltage displayed may not be accurate.



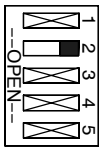
Display Hold OFF

Displays will not hold values. The voltage displayed while welding is an average reading over a time span of 6 to 8 seconds. If the weld time is less than 8 seconds, the voltage displayed may not be accurate.



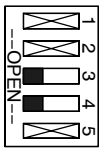
Do Not Display Amperage

Wire Speed / Amps Display will display only Wire Speed.



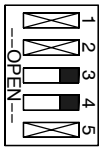
Display Amperage

Wire Speed / Amps Display will display Amps while welding and Wire Speed while not welding. If the hold function is enabled, Amps will be displayed during hold also.



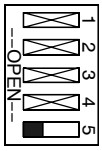
Wire Speed - Inches Per Minute

Displays Wire Speed in Inches per Minute.



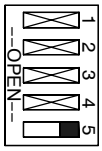
Wire Speed - Meters Per Minute

Displays Wire Speed in Meters per Minute.



Information OFF

Information is not displayed.



Information ON

With switch in ON position, at feeder power up, feeder will display various sets of information. Each set of information will be displayed for three seconds.

Display Board (PC22) Software Part Number –
Top display will show the first three digits, bottom display will show last three digits of the Display board (PC22) software revision level.

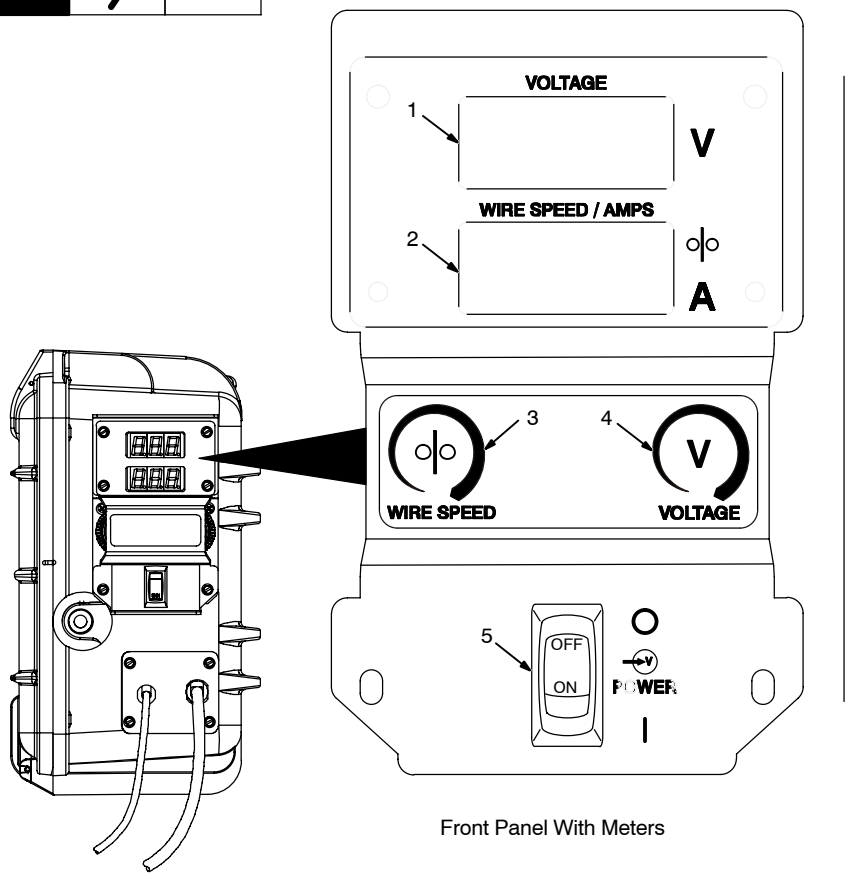
Motor Board (PC1) Software Part Number –
Top display will show the first three digits, bottom display will show last three digits, of the Motor board (PC1) software revision level.

Accumulated Weld Time –
This is the time the feeder has actually been used for welding. This information will be displayed in two halves. First being years and days, second in hours and minutes. Top display will show years/hours, bottom display will show days/minutes.

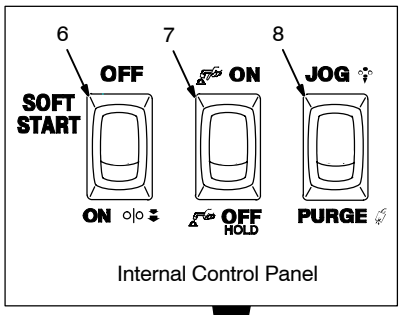
Ref. 805 170-A

SECTION 4 – OPERATION

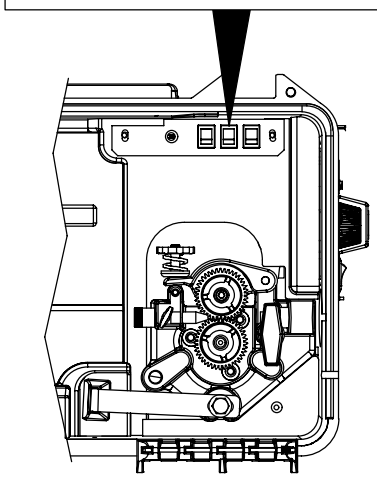
4-1. Controls With Meters



Front Panel With Meters



Internal Control Panel



Internal Side View

Ref. 805 168-A / 805 170-A

1 Voltmeter

When not welding and the wire feeder is not associateded with the WCC compatible welding power source, the voltmeter displays three dashes and decimal points. If the decimal points are blinking the wire feeder is trying to associate to the welding power source. See Section 3-6 for details.

When the wire feeder is associated with a WCC compatible welding power source, the voltmeter displays preset voltage while idle or weld voltage at the wire feeder while welding.

When connected to a non-WCC welding power source the voltmeter will display three dashes and three decimal points while idle. While welding the voltmeter will display weld voltage at the feeder.

Whether the wire feeder is associated, or not, the voltage displayed while welding is an average reading over a time span of 6 to 8 seconds. If the weld time is less than 8 seconds, the voltage displayed may not be accurate.

2 Wire Speed / Amperage Meter

Displays wire speed in Inches per Minute. To display wire speed in Meters per Minute, see Section 3-13.

Amperage displayed at the feeder is approximate. Refer to power source for actual amperage. To display Amperage, see Section 3-13.

3 Wire Speed Control

Use control to adjust wire speed. Maximum wire speed may be limited by arc voltage.

4 Voltage Control

Used to adjust output voltage of welding power source when wire feeder is associated with a WCC compatible welding power source. Voltage may be adjusted while not welding.

Has no function when the wire feeder is not associated with a WCC compatible welding power source.

5 Power Control Switch

6 Soft Start Switch

The Soft Start feature provides a smooth start during most weld conditions. When the trigger is pulled, the wire speed is approximately 50% of the weld wire speed, as set by the wire speed control knob. After an arc is established, the wire speed increases to the weld wire speed.

When using small diameters wire, or with inverter power sources, it may be necessary to turn switch off to obtain smooth starts.

7 Trigger Hold Switch

Trigger hold allows operator to weld without holding gun trigger.

To use trigger hold function, place trigger hold switch in the ON position.

The operator must hold the trigger for a minimum of 2 seconds, but no longer than 6 seconds before releasing it. Welding will continue when trigger is released.

To stop welding, press and release the trigger.

8 Jog/Purge Switch

Pressing the Jog switch allows the operator to jog wire without energizing the contactor or gas valve.

Pressing the Purge switch allows the operator to purge gas lines before welding and to preset gas flow rate at the flowmeter.

After adjusting the switches, close and latch the door before welding.

4-2. Gun Consumables Information

IRONMATE FC-1260 Consumables

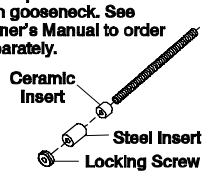
1. Contact Tips
198784 – .045"
198785 – 1/16"
198786 – .068-.072"
198788 – 5/64"

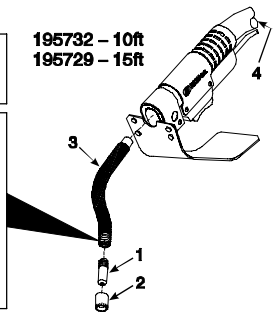
2. Insulated Nozzles
198801 – 1/8" stickout
198802 – 2" stickout
198803 – 2 3/4" stickout
198800 – Thread protector

3. Goosenecks (Includes Liners)	Liners
198796 – 6"/30°	198791
199335 – 6"/30° jacketed	
198794 – 6"/50°	
199332 – 6"/50° jacketed	
198798 – 6"/90°	198792
199334 – 6"/90° jacketed	
198799 – straight 8"/5°	
198797 – 12"/30°	198793
199336 – 12"/30° jacketed	
198795 – 12"/50°	
199333 – 12"/50° jacketed	

4. Gun Liners
195731 – 1/16-3/32" dia.
199178 – .045" dia.

These parts are included with gooseneck. See Owner's Manual to order separately.





ROUGHNECK Consumables

1. Standard FasTip
206175 – .023"
206178 – .030"
206177 – .035"
206179 – .045"
206180 – .052"
206181 – 1/16"
206182 – .068"
206183 – 5/64"

1. Heavy Duty FasTip
206186 – .035"
206187 – .040"
206188 – .045"
206189 – .052"
206190 – 1/16"
206191 – .068"
206192 – 5/64"

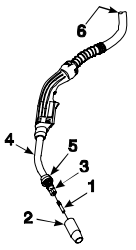
2. Standard Nozzle
198855 – 300/400 A
199618 – 500/600 A

3. Diffuser
206195 – 1/8" recess
206196 – flush
210664 – 1/4" recess

4. Goosenecks
199625 – 4.5"/48
199626 – 6"/48
199627 – 8"/48
213450 – 6"/straight

5. Insulator
198856

6. Gun Liners
202889 – .023-.030" wire
202890 – .035-.045" wire
202891 – .052-1/16" wire
202892 – 1/16-.078" wire
202893 – 5/64-3/32" wire



Additional parts available.

Q-Gun™ Replacement Parts & Centerfire™ Consumables

1. T Series Tip
T-023 – .023"
T-030 – .030"
T-035 – .035"
T-039 – .039"
T-045 – .045"
T-052 – .052"
T-062 – 1/16"
T-072 – .072"
T-078 – 5/64"

1. TT Series Tip Tapered Tip
TT-023 – .023"
TT-030 – .030"
TT-035 – .035"
TT-039 – .039"
TT-045 – .045"
TT-052 – .052"
TT-062 – 1/16"

2. Nozzles 5/8" ID Copper
N-5800C – Flush
N-5818C – 1/8" Recess
N-5814C – 1/4" Recess

2. Nozzles (Small) 5/8" ID Copper
NS-5800C – Flush
NS-5818C – 1/8" Recess
NS-5814C – 1/4" Recess

3. Diffuser	
D-1	DS-1

4. Cap	
10012	4323R

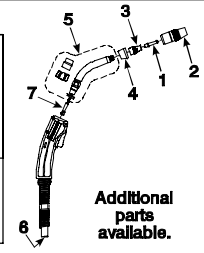
5. Neck
QT2-45 – 3.4" 45°
QT3-45 – 4.8" 45°
QT5-45 – 6.8" 45°
QT-180 – 5 - 5.2" Str

6. Gun Liners For Standard Wires
43015 – .023-.030" wire
44115 – .035-.045" wire
44215 – .045-1/16" wire
1920170 – 5/64" wire

6. Gun Liners – Nylon
43015X – .035" Alum. wire
43115X – 3/64" Alum. wire
44215X – 1/16" Alum. wire

7. Jump Liners For Standard Wires
QJL-2330 – .023-.030"
QJL-3545 – .035-.045"
QJL-116 – 1/16"
QJLH-116 – 1/16" HD

7. Jump Liners – Nylon
QJLN-364 – .035-3/64"
QJLN-116 – 1/16"



Additional parts available.

Dura-Flux™ Replacement Parts & Centerfire™ Consumables

1. Tip Insulator
7010024

2. Slip-On Tip Holder
7010026

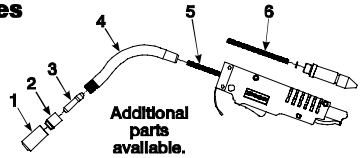
3. T Series Tip
T-062 – 1/16"
T-072 – .072"
T-078 – 5/64"

4. Neck w/Liner
1880232 – 6" 30°
1880222 – 6" 60°
1880230 – 6" 90°
1880223 – 12" 30°
1880231 – 12" 60°

4. Armored Neck w/Liner
1880233 – 6" 60°
1880234 – 12" 30°
1880235 – 6" 90°
1880236 – 6" 30°
1880237 – 12" 60°

5. Neck Liner
7010031 – 6"
7010032 – 12"

6. Power Pin Liner
7010035



Additional parts available.

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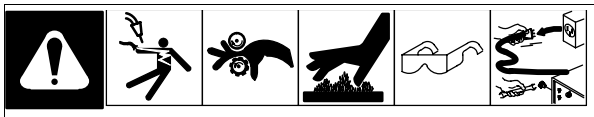
Notes

SECTION 5 – MAINTENANCE & TROUBLESHOOTING

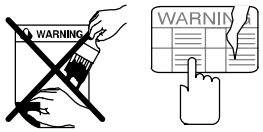
5-1. Routine Maintenance



Disconnect power before maintaining.

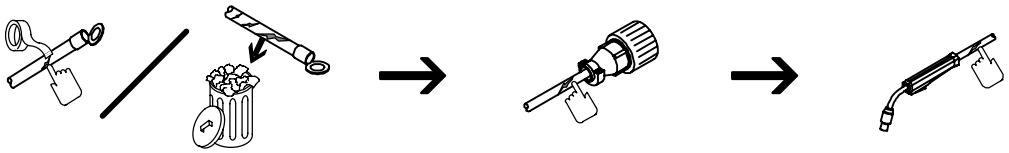
☞ *Maintain more often during severe conditions.*

3 Months



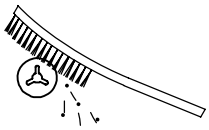
Replace Damaged Or Unreadable Labels

Replace Damaged Gas Hose

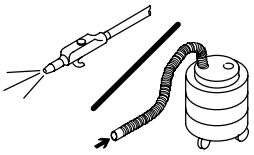


Repair Or Replace Cracked Cables And Cords

6 Months

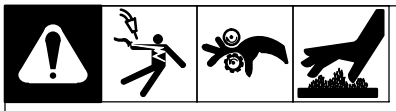


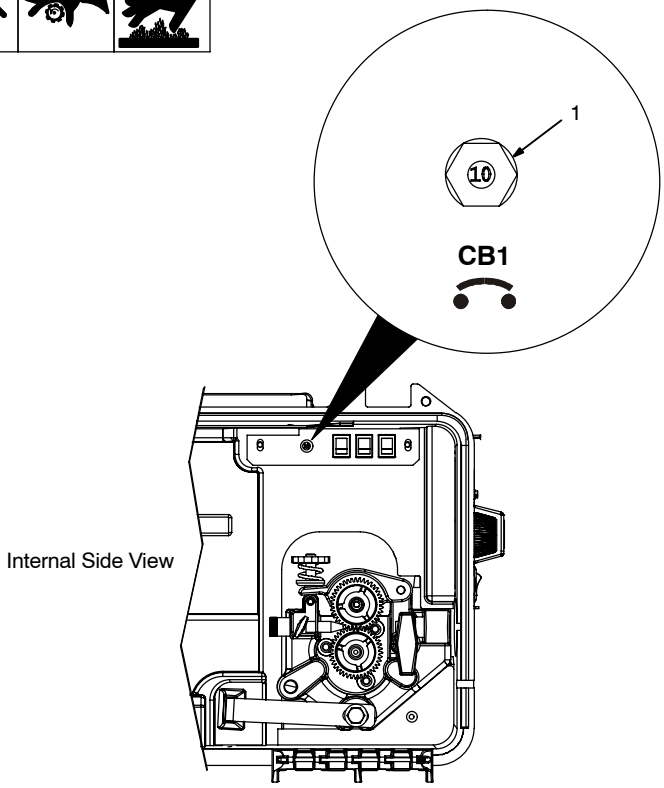
Clean Drive Rolls



Blow Out Or Vacuum Inside

5-2. Overload Protection And Thermostat Protection





Internal Side View

Turn Off wire feeder and welding power source. Stop engine on welding generator.

1 Circuit Breaker CB1

CB1 protects wire feeder from overload. Correct problem and reset CB1.

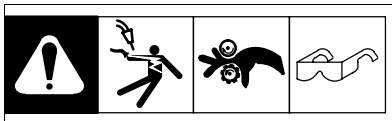
Close and latch door.

Thermostat Protection

Unit has internal thermostat protection and will not feed wire if overheating occurs (see Section 5-3).

Ref. 805 168-A

5-3. Troubleshooting



Trouble	Remedy
Wire does not feed; open-circuit voltage available.	Check power switch S1 and connections, replace if necessary.
	Check circuit breaker CB1. Reset CB1.
	Unit overheated. Allow unit to cool.
	Check sensing lead connection.
	Check gun trigger plug connection.
	Check gun trigger. See gun Owner's Manual.
	Check Resonant Coupler PC23 and connections, replace if necessary.
	Have Factory Authorized Service Agent check Control board PC1.
Wire feeds erratically.	Readjust hub tension.
	Readjust drive roll pressure.
	Clean or replace dirty or worn drive roll (see Section 3-7).
	Remove weld spatter around nozzle opening.
	Replace contact tip or liner. See gun Owner's Manual.
	Change to correct size and type drive roll (see Section 3-7)
	Incorrect size or worn wire guides (see Section 3-7)
	Check wire drive motor brushes.
	Have Factory Authorized Service Agent check control board PC1.
	Hub tension set too high (see Section 3-12).
Motor runs slowly.	Check and replace contact tip or liner if necessary.
	Have Factory Authorized Service Agent check Control board PC1.
	If soft start is not on, motor will switch to slower speed if current is not sensed by HD1.
	When soft start is on, motor will run slow until weld current is sensed by HD1.
	Hub tension set too high (see Section 3-12).
Unit does not switch out of Soft Start.	Check transducer HD1 and connections, and replace if necessary.
Wire feeds when Jog switch is pressed but not when gun trigger is pressed.	Check gun trigger connection at wire feeder. Check gun trigger leads and trigger switch. See gun Owner's Manual.
	Have Factory Authorized Service Agent check Control board PC1.
Wire stubbing on low end using a constant current power source or feeder resets.	Increase power source inductance setting if available.
	Increase output setting of power source or decrease wire feed speed.
Gas does not flow or does not stop flowing; wire feeds.	Check gas valve.
	Check coil voltage and connections of gas valve GS1. Check continuity of coil. Replace GS1 if necessary.
	Have Factory Authorized Service Agent check Control board PC1.
	Clear blockage in gas hose or replace hose.
	Clear blockage in welding gun.
Wire remains energized after trigger is released.	Check contactor W1 to see if contacts are frozen closed.

Trouble	Remedy
Gun trigger is pressed, gas does not flow, wire is not energized, wire feeds.	If a welding arc is not established in 3 seconds, after the gun trigger is activated, the unit will feed wire without energizing the contactor or gas valve. If the gun trigger is still activated after two minutes, the wire will stop feeding. This is to prevent complete despoolling of the wire, as in the case of a damaged gun.
Display on display board does not light.	Have Factory Authorized Service Agent check Control board PC1.
	Replace display board.
Segments on the display board are missing.	Replace display board.
Weld voltage on display board is not accurate.	Weld voltage on the display board will show weld voltage at the feeder. Due to voltage drops in the weld cables, weld voltage at the feeder will not match weld voltage at the welding power source. Due to averaging of weld voltage, if weld time is less than 8 seconds the display weld voltage at the feeder may not be accurate.
	Check Motor Control PC1 and connections, replace if necessary.
Open circuit voltage is not displayed when feeders is not in WCC mode.	This is normal (see Section 4-1).
Weld amperage on display board is not accurate.	Weld amperage displayed on the feeder will not match exactly with the weld amperage displayed on the welding power source.
	Check DIP switch settings on Display board PC22 (see Section 3-13).
	Check trasducer HD1 and connections, and replace contactor assembly if necessary.
	Check Motor Control PC1 and connections, replace if necessary.
Software and weld time information on display board is not accurate.	Check DIP switch settings on Display board PC22 (see Section 3-13).
	Check Motor Control PC1 and connections, replace if necessary.
In WCC mode – Preset voltage on display board is not displayed or is inaccurate.	Preset voltages between the feeder and welding power source should be within 0.5 volt of each other.
	Ensure that the feeder is associated to a WCC compatible power source (see Section 3-6).
	Ensure that the WCC compatible power source Mode Switch is set to V–SENSE FEEDER (WCC) (see Section 3-6).
	Check Display board PC22 and connections, and replace if necessary.
In WCC mode – Preset voltage is displayed, but is not adjustable.	Ensure that the WCC compatible power source Mode Switch is set to V–SENSE FEEDER (WCC) (see Section 3-6).

5-4. Diagnostics

Error Indicators		
Shown On Display	RED LED on Motor Board PC1	Error
HLP 11	1 Blink	Communication Error
HLP 12	2 Blinks	Trigger Error
HLP 14	4 Blinks (Constant Blinking)	Motor Overload Error
HLP 15	3 Blinks	Bus Bar Overheat Error

Error Indications
Error conditions are indicated by a “HLP” message on the (optional) display, or by the blinking of the Red LED on Motor Board PC1. To view the Red LED, turn Off power source, remove shroud, and turn power source On. The Red LED blinks in a 2.5 second cycle. The number of blinks in this period indicates the type of error. If an error condition does not exist on the motor board, the Red LED is on steady.

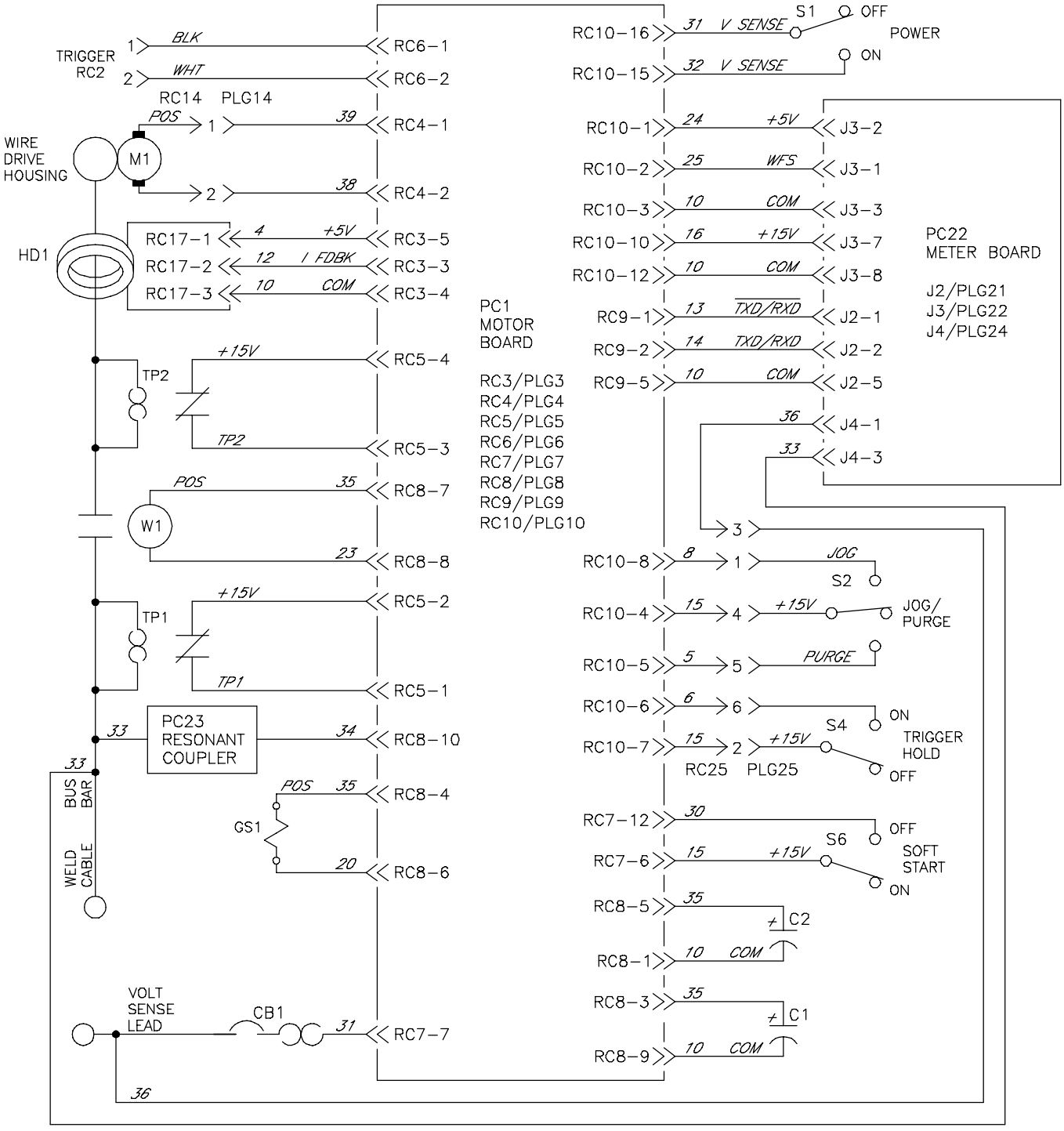
Communication Error
The communication error occurs 2.5 seconds after a loss of communication between the motor board and the meter board. The user may continue to weld with this error. The error may be cleared by turning power Off, waiting a minimum of two seconds, and turning power On.

Trigger Error
The trigger error occurs if the user has the trigger held for more than two minutes without striking an arc. The error may be cleared by releasing the trigger.

Motor Overload Error
The motor overload error can indicate that the motor has been drawing too much current for too long, To remedy this, reduce the wire feed speed or the wire feeder torque load/duty cycle. The error may be cleared by turning power Off, waiting a minimum of two seconds, and turning power On.

Bus Bar Overheat Error
The bus bar overheat error can be caused by the arc drawing too much current for too long. To remedy this, reduce the weld amperage or duty cycle.

SECTION 6 – ELECTRICAL DIAGRAM



⚠ WARNING	• Do not touch live electrical parts. • Disconnect input power or stop engine before servicing. • Do not operate with covers removed. • Have only qualified persons install, use, or service this unit.
ELECTRIC SHOCK HAZARD	

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Figure 6-1. Circuit Diagram For Wire Feeder

Notes

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SECTION 7 – PARTS LIST

☞ *Hardware is common and not available unless listed.*

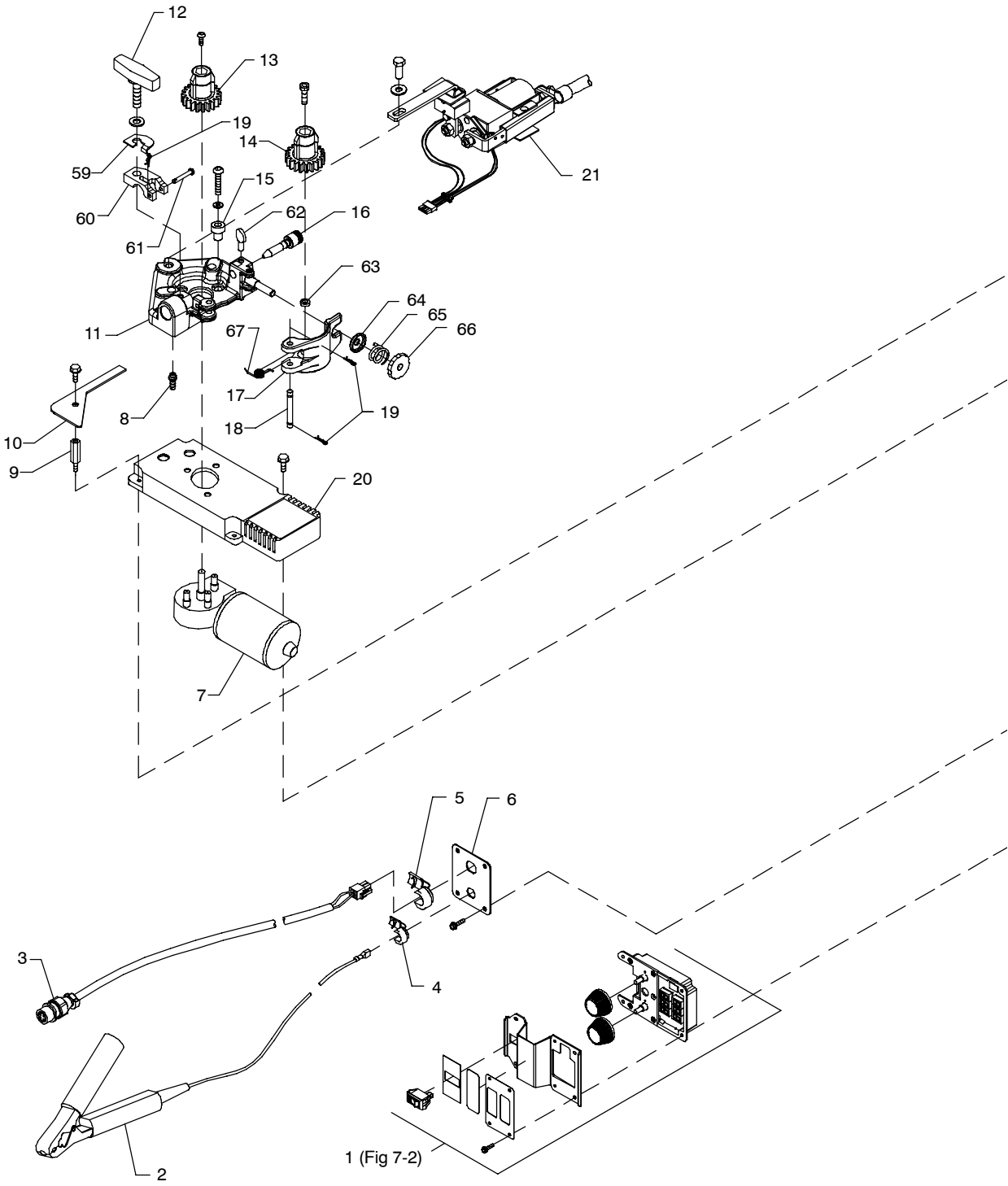
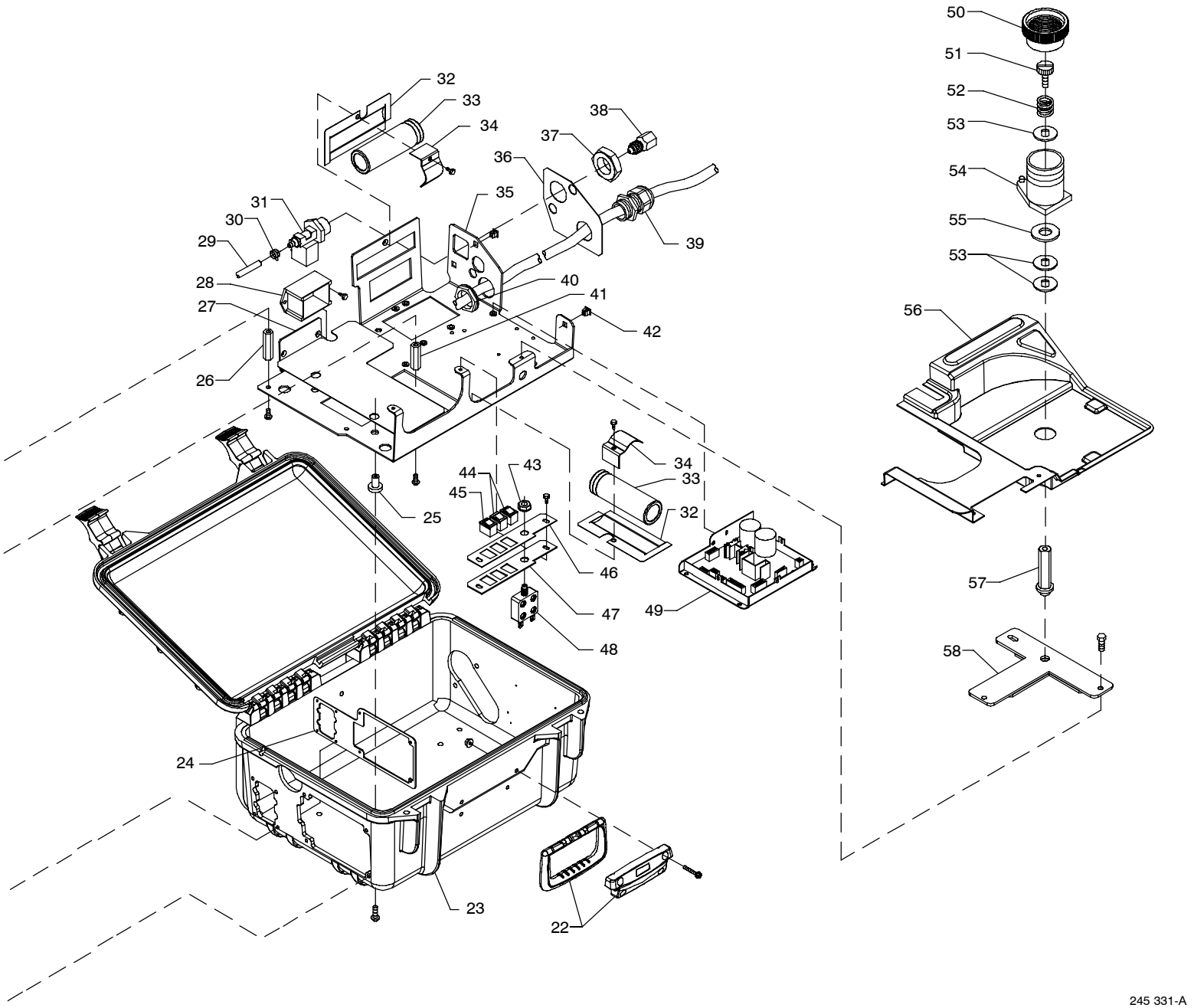


Figure 7-1. Exploded View Of SuitCase X-TREME 8VS WCC



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Item No.	Diagram marking	Part No.	Description	Quantity

Figure 7-1. Complete Assembly

1	Figure 7-2	..	Panel Assembly, Front (With Meters)	1
2		214 011	.. Cable, Sensing (Includes)	1
		600 848	.... Wire, Strd 12Ga Blk 600v 105C 65x30 Hyp .199Od	16 ft
		208 820	.... Clamp, Work	1
3		221 998	.. Cable, Trigger 25 In (Includes)	1
	PLG6	115 094	.... Housing Plug+Skts, (Service Kit)	1
		049 445	.... Cable, Port No 18 2/C Type Sjo Nprn Jkt	3 ft
	RC2	080 328	.... Rcpt W/Skts, Free Hanging	1
		048 834	.... Conn, Circ Cpc Clamp Str Rlf Size 11 .329 Od	1
4		230 228	.. Bushing, Strain Relief .120/.150 Id X .500 Mtg Hole	1
5		230 227	.. Bushing, Strain Relief .300 Id X .550/.625 Mtg Hole	1
6		214 007	.. Panel, Front Lower	1
7	M1	225 341	.. Motor, Gear 24VDC 150RPM 24:1 Ratio	1

Item No.	Diagram marking	Part No.	Description	Quantity

Figure 7-1. Complete Assembly (Continued)

8		144 172	Ftg, Hose Brs Barbed M 3/16 Tbg X .250-20	1
9		215 719	Stand-Off, No 10–32 X 1.000 Lg .375 Hex Stl M&F	1
10		226 281	Shroud, Corner	1
11		239 650	Housing, Adapter Gun/Feeder	1
12		124 778	Knob, T 2.000 Bar W/.312-18 Stud 1.000 Lg Plstc	1
13		173 619	Carrier, Drive Roll W/Components 24 Pitch 10mm Shaf	1
14		172 075	Carrier, Drive Roll W/Components 24 Pitch	1
15		173 620	Bushing, Mtg Motor	3
16		221 030	Guide, Wire Inlet Anti-Wear One PC (.023 To 5/64)	1
17		166 071	Lever, Mtg Pressure Gear	1
18		079 634	Pin, Hinge	1
19		151 828	Pin, Cotter Hair .042 X .750	3
20		173 616	Cover, Right Angle Motor	1
21	W1	232 454	Contactor W/Bus Bars, (Includes)	1
	PLG5	201 665	Housing Plug+Skts, (Service Kit)	1
	TP1, TP2	230 465	Thermostat, NC Open 120C Close 90C Snap Action	2
		183 387	Washer, Cone .380idx .860odx.109t Stl Pld 4000Lbs	4
		223 862	Nut, M10-1.5 17Hex 8H Brs Din 934	2
22		208 015	Handle, Rubberized Carrying	1
23		229 659	Case, Control Feeder Machined SC	1
24		229 657	Panel, Front Backing Plate	1
25		081 895	Nut, 010–32 Rubber .75Dia .81l Insert In .38Hole	3
26		200 613	Stand-Off, No 10–32 X 1.835 Lg .500 Hex Stl Fem	3
27		226 285	Insulator, Motor	1
28	PC23	234 412	Module, WCC Series Resonant L-C Coupler	1
29		200 814	Hose Assy, Sae .187 Id X .410 Od X 17.000 W/Clamps	1
30		149 332	Clamp, Hose .405 – .485 Clp Dia Slfttng Olive Dra	2
31	GS1	226 819	Valve, 12VDC 1Way .750–14 Thd 2mm Orf 100PSI	1
32		226 284	Insulator, Capacitors	2
33	C1, C2	200 606	Capacitor, Elctlt 1200 Uf 300 VDC Can 1.39 Dia	2
34		226 283	Bracket, Capacitor	2
35		226 287	Chassis, Control Box	1
36		226 286	Insulator, Rear Panel	1
37		220 805	Nut, 750-14 Nps 1.48Hex .41H Nyl	1
38		211 989	Fitting, W/Screen	1
39		139 041	Bushing, Strain Relief .450/.709 Id X1.115 Mtg Hole	1
40		214 860	Nut, Ln Pg 21 1.26Hex .14H Nickel Plated Brass	1
41		200 612	Stand-Off, No 10-32 X 1.710 Lg .438 Dia Stl Fem	1
42		222 181	Grommet, Scr No 8/10 Panel Hole .281 Sq .031 High	3
43		147 195	Nut, 375-27 .54Hex .25h Nyl Flange .62D	1
44	S4, S6	217 932	Switch, Rocker Spst .4VA 28VDC On-None-Off .187 Ter	2
45	S2	216 295	Switch, Rocker Spdt .4VA 28VDC (On)–Off–(On) .187T	1
46		234 579	Nameplate, Inner	1
47		226 732	Panel, Inner	1
48	CB1	083 432	Circuit Breaker, Man Reset 1P 10A 250VAC Frict	1
49	PC1	237 732	Circuit Card Assy, Motor Control W/Program WCC	1
50		202 695	Nut, Hub	1
51		237 843	Knob, Brake Adjust	1
52		172 918	Spring	1
53		201 309	Washer, Anti-Turn	3
54		202 696	Hub, Spool (Mod)	1
55		058 424	Washer, Fibre (Brake)	1
56		226 280	Shroud, Wire	1
57		226 753	Spindle, Spool Support W/Left Hand Threads (Torque to 37 in lb (4.2 N·m)	1

Item No.	Diagram marking	Part No.	Description	Quantity

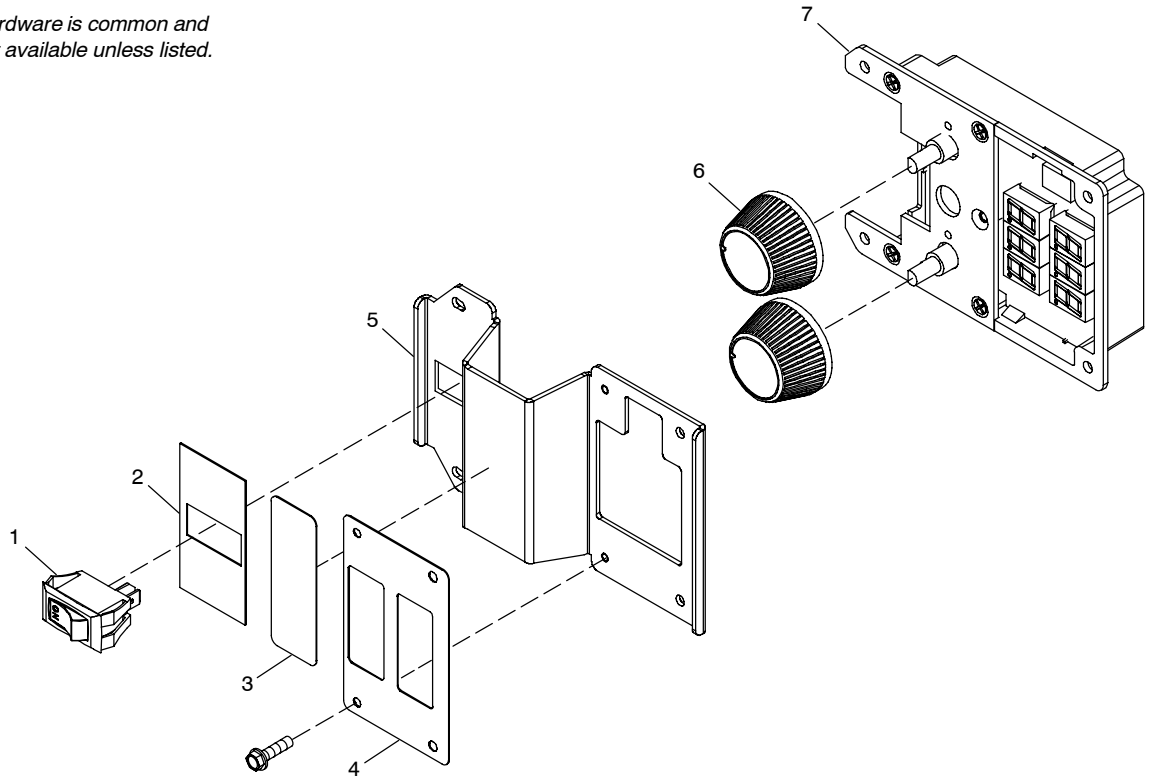
Figure 7-1. Complete Assembly (Continued)

58		226 752	Support, Spool	1
		237 176	Label, Warning	1
		196 956	Label, Warning Electric Shock And Pinch Wordless	1
		222 306	Label, Warning General Precautionary Static Vert	2
	PLG3, 25	115 093	Housing Plug+Skts, (Service Kit)	2
	PLG4	131 054	Housing Rcpt+Skts, (Service Kit)	1
	PLG5	201 665	Housing Plug+Skts, (Service Kit)	1
	PLG7	130 203	Housing Plug+Skts, (Service Kit)	1
	PLG8	115 091	Housing Plug+Skts, (Service Kit)	1
	PLG9, 21	131 055	Housing Rcpt+Skts, (Service Kit)	2
	PLG10	131 052	Housing Rcpt+Skts, (Service Kit)	1
	PLG14	227 529	Housing Plug+Skts, (Service Kit)	1
	PLG17	222 397	Housing Plug+Skts, (Service Kit)	1
	PLG22	115 092	Housing Plug+Skts, (Service Kit)	1
	PLG24	131 204	Housing Plug+Skts, (Service Kit)	1
	RC25	131 059	Housing Plug+Pins, (Service Kit)	1
59		237 188	Lock, Pin Power	1
60		234 074	Clamp, Pin	1
61		234 073	Pin, Hinge	1
62		054 263	Screw, Thumb	1
63		166 072	Spacer, Gear	1
64		085 244	Washer, Cupped .328 ID X .812 ODX16 GA X.125 Lip	1
65		089 477	Spring	1
66		240 975	Knob	1
67		222 159	Spring	1

+When ordering a component originally displaying a precautionary label, the label should also be ordered.

To maintain the factory original performance of your equipment, use only Manufacturer's Suggested Replacement Parts. Model and serial number required when ordering parts from your local distributor.

☞ *Hardware is common and not available unless listed.*



Ref. 805 171-B

Figure 7-2. Front Panel Assembly with Meters

Item No.	Dia. Mkgs.	Part No.	Description	Quantity
			Figure 7-2. Front Panel Assembly with Meters (Figure 7-1 Item 15)	
1	S1	111 997	Switch, Rocker SPST 10A 250VAC On-Off Visi Red Rock	1
2			Nameplate, Lower (Order By Model And Serial Number)	1
3		234 578	Label, Front PL-22	1
4		237 055	Lens	1
5		229 271	Panel, Front Display/Switches/Knob Guard	1
6		229 274	Knob, Tapered 1.00/1.500Dia X .90H X .250ID	2
7	PC22	236 854	Circuit Card Assy, W/Pgrm & Potted	1

To maintain the factory original performance of your equipment, use only Manufacturer's Suggested Replacement Parts. Model and serial number required when ordering parts from your local distributor.

Table 7-1. Drive Roll & Inlet Guide

☞ *Base selection of drive rolls upon the following recommended usages:*

1. *V-Grooved rolls for hard wire.*
2. *U-Grooved rolls for soft and soft shelled cored wires.*
3. *U-Cogged rolls for extremely soft shelled wires (usually hard surfacing types).*
4. *V-Knurled rolls for hard shelled cored wires.*
5. *Drive roll types may be mixed to suit particular requirements (example: V-Knurled roll in combination with U-Grooved).*

Wire Diameter			Drive Roll (2 Required)		Inlet Wire Guide
Fraction	Decimal	Metric	Part No.	Type	
.023/.025 in	.023/.025 in	0.6 mm	087 130	V-Grooved	221 030
.030 in	.030 in	0.8 mm	053 695	V-Grooved	221 030
.035 in	.035 in	0.9 mm	053 700	V-Grooved	221 030
.040 in	.040 in	1.0 mm	053 696	V-Grooved	221 030
.045 in	.045 in	1.2 mm	053 697	V-Grooved	221 030
.052 in	.052 in	1.3 mm	053 698	V-Grooved	221 030
1/16 in	.062 in	1.6 mm	053 699	V-Grooved	221 030
.035 in	.035 in	0.9 mm	072 000	U-Grooved	221 030
.045 in	.045 in	1.2 mm	053 701	U-Grooved	221 030
.052 in	.052 in	1.3 mm	053 702	U-Grooved	221 030
1/16 in	.062 in	1.6 mm	053 706	U-Grooved	221 030
.035 in	.035 in	0.9 mm	132 958	V-Knurled	221 030
.045 in	.045 in	1.2 mm	132 957	V-Knurled	221 030
.052 in	.052 in	1.3 mm	132 956	V-Knurled	221 030
1/16 in	.062 in	1.6 mm	132 955	V-Knurled	221 030
.045 in	.045 in	1.2 mm	083 489	U-Cogged	221 030
.052 in	.052 in	1.3 mm	083 490	U-Cogged	221 030
1/16 in	.062 in	1.6 mm	053 708	U-Cogged	221 030

S-0859

Notes

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TRUE BLUE® WARRANTY

Effective January 1, 2009
(Equipment with a serial number preface of LK or newer)

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LIMITED WARRANTY – Subject to the terms and conditions below, Miller Electric Mfg. Co., Appleton, Wisconsin, warrants to its original retail purchaser that new Miller equipment sold after the effective date of this limited warranty is free of defects in material and workmanship at the time it is shipped by Miller. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

Within the warranty periods listed below, Miller will repair or replace any warranted parts or components that fail due to such defects in material or workmanship. Miller must be notified in writing within thirty (30) days of such defect or failure, at which time Miller will provide instructions on the warranty claim procedures to be followed.

Miller shall honor warranty claims on warranted equipment listed below in the event of such a failure within the warranty time periods. All warranty time periods start on the delivery date of the equipment to the original end-user purchaser, and not to exceed one year after the equipment is shipped to a North American distributor or eighteen months after the equipment is shipped to an International distributor.

1. 5 Years Parts — 3 Years Labor
   * Original main power rectifiers only to include SCRs, diodes, and discrete rectifier modules
2. 3 Years — Parts and Labor
   * Transformer/Rectifier Power Sources
   * Plasma Arc Cutting Power Sources
   * Process Controllers
   * Semi-Automatic and Automatic Wire Feeders
   * Inverter Power Sources (Unless Otherwise Stated)
   * Water Coolant Systems (Integrated)
   * Intellitig
   * Engine Driven Welding Generators **(NOTE: Engines are warranted separately by the engine manufacturer.)**
3. 1 Year — Parts and Labor Unless Specified
   * Motor Driven Guns (w/exception of Spoolmate Spoolguns)
   * Positioners and Controllers
   * Automatic Motion Devices
   * RFCS Foot Controls
   * Induction Heating Power Sources, Coolers, and Electronic Controls/Recorders
   * Water Coolant Systems (Non-Integrated)
   * Flowgauge and Flowmeter Regulators (No Labor)
   * HF Units
   * Grids
   * Spot Welders
   * Load Banks
   * Fume Extractors
   * Arc Stud Power Sources & Arc Stud Guns
   * Racks
   * Running Gear/Trailers
   * Plasma Cutting Torches (except APT & SAF Models)
   * Field Options (NOTE: Field options are covered under True Blue® for the remaining warranty period of the product they are installed in, or for a minimum of one year — whichever is greater.)
   * Bernard-Branded Mig Guns (No Labor)
   * Weldcraft-Branded TIG Torches (No Labor)
   * Subarc Wire Drive Assemblies
4. 6 Months — Batteries
5. 90 Days — Parts
   * MIG Guns and Subarc (SAW) Guns
   * Induction Heating Coils and Blankets, Cables, and Non-Electronic Controls
   * APT & SAF Model Plasma Cutting Torches
   * Remote Controls
   * Accessory (Kits)
   * Replacement Parts (No labor)
   * Spoolmate Spoolguns
   * Canvas Covers

Miller's True Blue® Limited Warranty shall not apply to:

1. **Consumable components; such as contact tips, cutting nozzles, contactors, brushes, slip rings, relays or parts that fail due to normal wear. (Exception: brushes, slip rings, and relays are covered on Bobcat, Trailblazer, and Legend models.)**
2. Items furnished by Miller, but manufactured by others, such as engines or trade accessories. These items are covered by the manufacturer's warranty, if any.
3. Equipment that has been modified by any party other than Miller, or equipment that has been improperly installed, improperly operated or misused based upon industry standards, or equipment which has not had reasonable and necessary maintenance, or equipment which has been used for operation outside of the specifications for the equipment.

MILLER PRODUCTS ARE INTENDED FOR PURCHASE AND USE BY COMMERCIAL/INDUSTRIAL USERS AND PERSONS TRAINED AND EXPERIENCED IN THE USE AND MAINTENANCE OF WELDING EQUIPMENT.

In the event of a warranty claim covered by this warranty, the exclusive remedies shall be, at Miller's option: (1) repair; or (2) replacement; or, where authorized in writing by Miller in appropriate cases, (3) the reasonable cost of repair or replacement at an authorized Miller service station; or (4) payment of or credit for the purchase price (less reasonable depreciation based upon actual use) upon return of the goods at customer's risk and expense. Miller's option of repair or replacement will be F.O.B., Factory at Appleton, Wisconsin, or F.O.B. at a Miller authorized service facility as determined by Miller. Therefore no compensation or reimbursement for transportation costs of any kind will be allowed.

TO THE EXTENT PERMITTED BY LAW, THE REMEDIES PROVIDED HEREIN ARE THE SOLE AND EXCLUSIVE REMEDIES. IN NO EVENT SHALL MILLER BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING LOSS OF PROFIT), WHETHER BASED ON CONTRACT, TORT OR ANY OTHER LEGAL THEORY.

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Owner's Record

Please complete and retain with your personal records.

Model Name	Serial/Style Number
Purchase Date	(Date which equipment was delivered to original customer.)
Distributor	
Address	
City	
State	Zip

For Service

Contact a DISTRIBUTOR or SERVICE AGENCY near you.

Always provide Model Name and Serial/Style Number.

Contact your Distributor for:	Welding Supplies and Consumables Options and Accessories Personal Safety Equipment Service and Repair Replacement Parts Training (Schools, Videos, Books) Technical Manuals (Servicing Information and Parts) Circuit Diagrams Welding Process Handbooks To locate a Distributor or Service Agency visit www.millerwelds.com or call 1-800-4-A-Miller
Contact the Delivering Carrier to:	File a claim for loss or damage during shipment. For assistance in filing or settling claims, contact your distributor and/or equipment manufacturer's Transportation Department.

Miller Electric Mfg. Co.
An Illinois Tool Works Company
1635 West Spencer Street
Appleton, WI 54914 USA

International Headquarters–USA
USA Phone: 920-735-4505 Auto-Attended
USA & Canada FAX: 920-735-4134
International FAX: 920-735-4125

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